

FLIGHT

First Aero Weekly in the World.

Founder and Editor: STANLEY SPOONER.

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport.

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Flight.

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EDITORIAL COMMENT.

Landlords, Tenants, and Air-risks.

For weeks and even months past it has been almost impossible to take up a daily paper without coming across some letter, article or paragraph touching upon the subject which concerns most of us pretty directly, aircraft insurance, and its relationship as between landlord and tenant. Views and opinions have been aired from a variety of people, one thing being particularly noticeable in the case of the communications from professional legal sources, the reader has been left at the end of his perusal of these contributions to the fray, in exactly the same position as to knowledge as before he started. That is one delightful phase of the legal mind, to state a case from different base lines and build up a theory of what may or may not happen in each particular series of circumstances, but arriving at no definite conclusion one way or the other as from a common-sense point of view. And they are scarcely to be blamed, as the best Judge—let alone mere solicitors or counsel—never knows what view the law may take of any particular legal problem, when other Judges get hold of the same tangle to unravel. He just gives his judgment, to

be promptly reversed by his next superior-court, the said superior-court's views, as a matter of course, giving it the other way round, with one or two disagreeing upon everything, just so as to leave matters in a state of uncertainty as to whether justice has really been reached after all. The side which vehemently protests it has, need not be specified. The particular bone of contention which is in our mind is with whom rests the liability to ensure against damage done to buildings as the result of aircraft raids, whether that damage result from the enemy bombs, our own aircraft, or the aftermath of bursting shells sent in pursuit of the visitors from our own protecting guns. The landlord, in the case of a repairing lease, repudiates responsibility—the tenant equally denies liability—but both have a sneaking sort of doubt that they *may* be presently held liable for setting right damage done under such abnormal conditions as at present exist. So that in cases where some mutual arrangement cannot be arrived at, each side, so as to be quite safe, insures the same property—which is quite good business for the insurer. In all such cases it is to be hoped the Government scheme has been the gainer by the dual transaction.

In the case of agreements where tenants are not liable for damage other than wilful, or unreasonable wear and tear, the position becomes a little more complicated, as although there is little doubt that the landlord in his own interests would ultimately have to rebuild, or reinstate his own property, he could do so at his own pleasure—or displeasure—the tenant in the meantime having no option but to "sit tight" elsewhere, and each quarter go through the exhilarating formula of handing over the amount of rent for which he is liable, what time his tenement remains uninhabitable and open to the wide, wide world—all of which seems an absurd position into which to be landed. Had the Government, as we strenuously advocated twelve months ago they should do, made the liability a national one—by the bye what has become of that great national meeting on October 4th of the mayors of the country at the Mansion House, calling upon the Government to make the liability a national one?—all these anxieties of tenants and landlords would have been obviated, and we fancy the country would not have been very much the poorer at the finish, even assuming this item in the account against our enemies, which will have to be presented and paid presently, were, in the enormity of the other claims, overlooked. As it is, the next best thing—again our suggestion, as an alternative—was done, although very very late in the day, viz., the institution of

the Government scheme of National Insurance, whereby the profits of the business go towards helping to neutralise the hideous waste and leakage in other directions arising out of the war. As a business proposition—from the Nation's point of view—the Government rates fixed upon are distinctly sound. From the insured's individual point of view, having regard to the universal character of the scheme, it is much too heavy, and might well have been a quarter the sum, viz., 6d. per cent.—to wit, one enterprising company already issues policies at 1s. 9d. per cent. Twenty times the number of people would without doubt have then covered their property, whilst the risk would have remained the same—with much greater resulting profits for the National Exchequer. But after all, this phase of the war spells neither bankruptcy to the individual nor affluence for the State, and we think the simplest solution to all the doubtful opinions is to see that all property is promptly protected under the scheme, and leave it to the future to bring forth some authoritative decision as to the liability for the premium. The amount in possible dispute is, after all, in the majority of cases comparatively negligible, in relation to the consequences of non-insurance, and in the conditions of the world. Mr. Lloyd George, who was, we believe, responsible for the Act, added another very fine piece of work to his magnificent record on behalf of the national and Imperial interests. Possibly an excellent and a very simple way out of the quandary would be for a short Act to be passed through both Houses, dividing up the liability between landlord and tenant in proper ratio, with the onus upon the landlord to see that adequate insurance is effected by the tenant with the right to himself insure, in the event of failure to cover on the part of the tenant within some very short period of the enactment, and to recover the tenant's moiety by distraint if necessary. We admit the passing of such an Act would necessarily deprive the newspapers of a large amount of gratuitous copy, and would probably eliminate all chances of a glorious number of law actions to the benefit of the legal profession. But we venture to prophesy that both these calamities would be lived down in time, and a good deal of bad blood saved between people who have been probably associated together for many decades. In the meantime a middle course has been put forward in *The Times* by Mr. A. G. Reed, in reply to a legal point raised by W.M.H., which would appear to meet the objections to put down the premium by either tenant or landlord. The point raised is very subtle, and might easily lead to litigation of the most refined order. W.M.H.'s point is as follows:—

"It seems desirable that lessees should be warned against relying for protection against damage upon insurances effected in the name only of the landlord.

"The popular, and perhaps the common-sense, view is that it is the house that is insured by the policy; but in law a policy is simply a contract of indemnity, i.e., to indemnify the person against loss. If, therefore, the lessee's covenants in the lease cover the

making good of damage caused by aircraft, then it appears that in law the ultimate burden of making good the damage would fall on the lessee, in spite of the policy.

"Lessees, therefore, at any rate where the lease contains wide repairing covenants, should see either that any policy effected by the landlord is placed in the name of the lessee as well as that of the landlord, or should effect a separate insurance in their own names."

Mr. Reed comes to the rescue of both sides. He states that he believes the difficulty raised by W.M.H.

"has in many cases been got over by landlords agreeing to effect the insurance policy in the name of the broker 'and or as agent.' The broker thus becomes agent for either landlord or lessee, whichever the law should decide was the responsible party. The issue of a policy in the name of a third person as agent, where any doubt exists as to liability, certainly seems a more sensible arrangement than that two policies should be effected by landlord and lessee for two premiums. The only merit of the latter course seems to be that under the Government scheme the State would get double premium and it will know what to do with it."

Common sense therefore suggests that to meet the difficulties and uniqueness of the situation that short Act should be placed upon the Statute Book.

Perhaps our Munitions Minister may find a spare moment to put in a good word for its adoption. We know Mr. Lloyd George, like all other up-to-date men of moment in this mundane world of ours, is acquainted with "FLIGHT," for has not that gifted artist, Mr. S. Begg, recorded its presence at the head of the list—all others are entirely in the shade—in his remarkable double-page picture in the *Illustrated London News* of last Saturday, of the Minister for Munitions in his office—a drawing made by special permission.

With this hope we shall look forward to seeing, within a very short time, the suggested Bill an *affaire accompli*, provided always that parliamentary procedure permits of its being made law without undue delay.

An R.F.C. "Order of the Day."

If justification were required of our paean of praise to the Royal Flying Corps last week, for the invaluable work to their credit in connection with the move forward which the Allies were able to make, it is surely to be found in the "Order of the Day" issued by Sir John French on Monday last. It is one that our flying unit may well be proud of, and if incentive were needed—which it is not—to urge the R.F.C. officers and observers to even greater efforts it is there embodied. Sir John French's message was as follows:—

"The Field-Marshal Commanding-in-Chief desires to express to Brigadier-General H. M. Trenchard, C.B., D.S.O., A.D.C., and all ranks of the Royal Flying Corps his appreciation of the valuable work they have performed during the battle which commenced on September 25th. He recognises the extremely adverse weather conditions which entailed flying under heavy fire at very low altitudes.

"He desires especially to thank pilots and observers for their plucky work, in co-operation with the artillery, in photography, and the bomb attacks on the enemy's railways, which were of great value in interrupting his communications.

"Throughout these operations the Royal Flying Corps have gallantly maintained the splendid record they have achieved since the commencement of the campaign."

Under date September 27th:

Missing.

Second Lieutenant B. G. James, R.F.A., attached R.F.C.
Second Lieutenant L. W. Yule, Royal Flying Corps.

The following casualty in the Australian Imperial Force with the Mediterranean Expeditionary Force has been announced:—

Prisoner of War.

Captain W. N. Treloar, Australian Royal Flying Corps.

The Roll of Honour.

THE following have been officially announced by the War Office:—

Under date September 26th:

Wounded.

Second Lieutenant E. R. Hyde, R. Berks Regt., attached R.F.C.

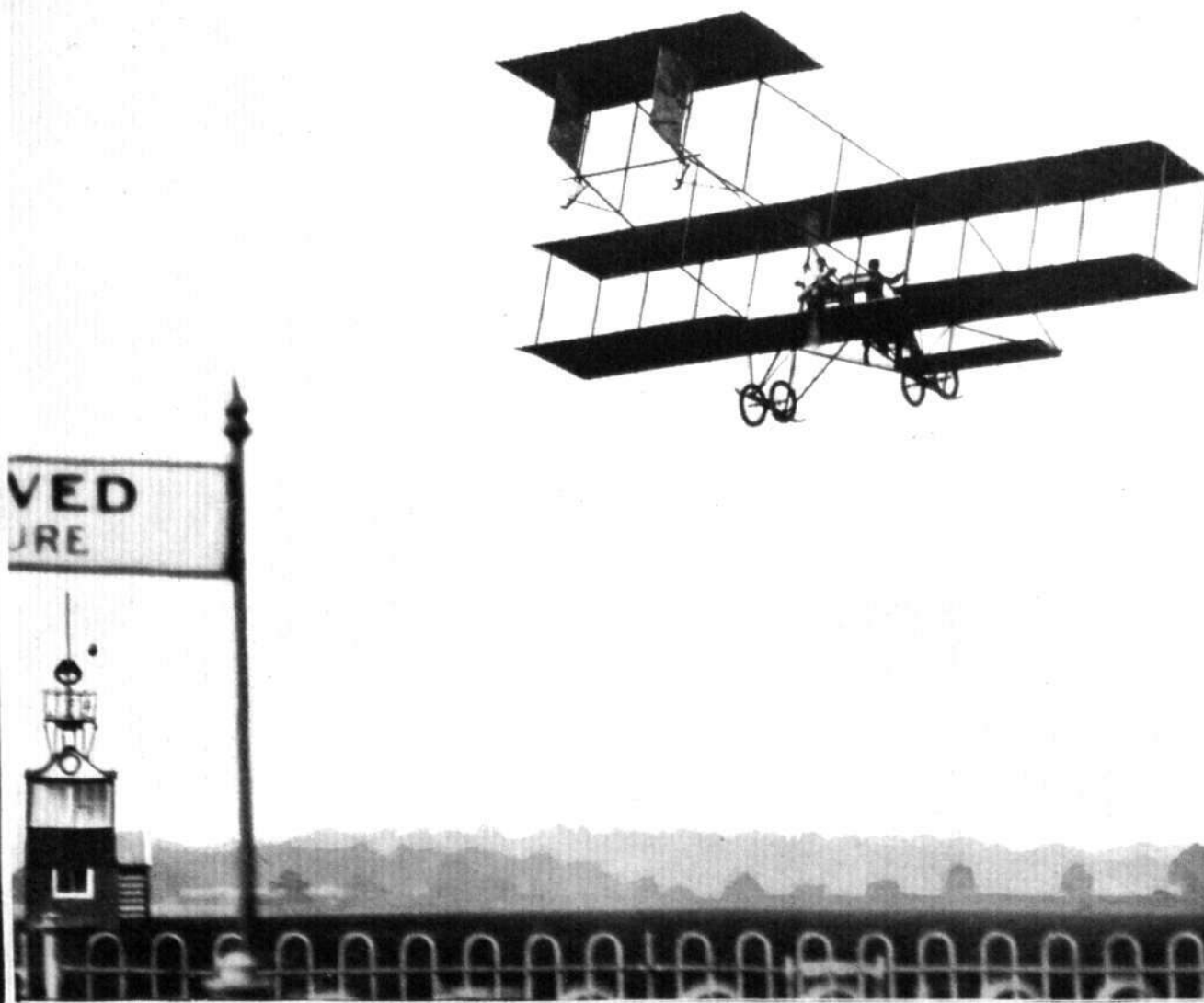
Missing.

Second Lieutenant M. W. Greenhow, W. Yorks Regt., attached R.F.C.

Second Lieutenant J. N. Washington, Manchester Regt. and R.F.C.

OCTOBER 8, 1915.

FLIGHT



The end of a fine *vol plané* by Mr. J. S. B. Winter, with a passenger, at Hendon, on the Grahame-White school 'bus.

"Flight" Copyright.

AIRCRAFT WORK AT THE FRONT.

OFFICIAL INFORMATION.

British.

General Headquarters, Oct. 1st.

"DURING the last seven days our aircraft have been very active. Seventeen air combats are reported, in only one of which was the British machine worsted. A German machine was brought down inside our lines yesterday. Attacks have been made on the railways in the hostile area. The main lines are known to have been damaged in fifteen different places. Five, and probably six, trains were partially wrecked, and the locomotive sheds at Valenciennes were set on fire. Considerable interference has thus been caused to the German railway organisation."

French.

Paris, Sept. 30th. Afternoon.

"In spite of the most unfavourable atmospheric conditions, our air squadrons bombarded yesterday the lines of communication in the rear of the German front."

"Shells were also thrown on the railway stations of the valley of the Suippe, Bazancourt, Warmeriville, Pont Favarger, and St. Hilaire le Petit, and on a column marching near Somme Py."

Paris, Sept. 30th. Evening.

"A squadron of aeroplanes to-day dropped 72 bombs on the railway station of Guignicourt. The bombardment appears to have been very effective. The aeroplanes were violently cannonaded, but returned in safety to their base."

Paris, Oct. 1st. Evening.

"Our dirigible 'Alsace' bombarded during the night of September 30th the junction of Amagne-Lycquy, the station of Attigny, and the station of Vouziers. It was fired at all along its route, particularly at Vouziers, where it was surrounded with bursting incendiary shells. The airship returned safely to its base after fulfilling its mission. It was struck by some fragments of shells, which did no real damage."

Paris, Oct. 2nd. Afternoon.

"Our air squadrons threw a very large number of projectiles upon the railway stations and lines behind the enemy's front, notably upon the bifurcation from Guignicourt to Ami Fontaine."

"Our gunplanes carried out during the night a bombardment of the German lines."

Paris, Oct. 2nd. Evening.

"In Champagne one of our armed aeroplanes hit an enemy captive balloon, which burst into flames."

"A squadron of sixty-five aeroplanes to-day bombarded the station of Vouziers and the aviation ground near the town and the station of Challerange. Over 300 shells were dropped on the objectives which were struck. Another bombardment cut in two a train travelling near the station of Laon."

Paris, Oct. 3rd. Evening.

"A squadron of our aeroplanes this morning bombarded the station, the railway bridge, and the military buildings of Luxemburg."

Paris, Oct. 4th. Afternoon.

"One of our air squadrons has dropped forty large calibre bombs on the Sablons railway station at Metz. Other aeroplanes have carried on the bombardment of the railway lines, junctions, and stations behind the German front."

"One of our aeroplane squadrons dropped about fifty bombs on the railway station of Biaches, near Peronne."

Paris, Oct. 4th. Evening.

"An enemy aeroplane was forced to come down within our lines. The two officers who occupied it were made prisoners."

Russian.

Petrograd, Oct. 1st.

"German aeroplanes threw some bombs on Ustdevinsk, Riga, and the station of Oguer without, however, doing damage of military importance."

"According to reports received, Austrian aircraft making a reconnaissance on our extreme left flew over Roumanian territory in order to escape our fire."

Italian.

Rome, Sept. 30th.

"A hostile seaplane dropped two bombs on Porto Buso. There were no victims and no damage was done. Our aviators bombarded, apparently effectively, some places in the Carso indicated as the headquarters of the Austrian Commanders."

Rome, Oct. 2nd.

"An enemy aeroplane yesterday dropped some bombs near the station of Cervignano, wounding two civilians. Two other aeroplanes attempted to raid our positions on the Carso, but were driven off by our anti-aircraft guns."

Serbian.

Nish, Sept. 27th.

"On September 24th enemy aeroplanes flew over Pozarevatz and dropped 22 bombs, killing three men, but causing no damage, nor any loss from a military point of view."

"On the 25th enemy aeroplanes again flew over Pozarevatz, and again threw bombs, with the result that one man was killed."

Nish, Oct. 1st.

"On September 30th enemy aircraft dropped forty-three bombs, killing five persons and wounding ten. Three bombs fell on the station of Papovo, the junction of the Belgrade-Nish and Belgrade-Kragujevatz lines. No damage was done. Near Kragujevatz the wing of an aeroplane was found. Another aeroplane must, therefore, have come down near Kragujevatz, besides the one which was brought down at Cragourvatl."

Nish, Oct. 2nd.

"On September 29th, between four and six p.m., seven enemy aeroplanes flew over Pojarevatz, dropping about sixty bombs on the town and its outskirts. One civilian was killed, and two soldiers and three civilians were wounded. Pojarevatz is not a camp or a point of military importance. On September 30th, between seven and eight a.m., five or six enemy aeroplanes flew over Kragujevacs, dropping about thirty bombs. One enemy aeroplane was hit by our artillery, and fell in flames in the centre of the town. The aviators were burnt to death."

Nish, Oct. 4th.

"The two enemy aviators who came down at Kragujevatz were Germans. They had orders to bomb the southern parts of the town."

German.

Berlin, Sept. 27th.

"Three enemy aeroplanes, among them a great French battle aeroplane, were shot down yesterday in aerial battles north-east of Ypres and south-west of Lille, and two more French aeroplanes were brought down in Champagne by artillery and rifle fire.

"Enemy airmen bombarded the town of Peronne, killing two women and two children and severely wounding ten other citizens.

"In the Gulf of Riga Russian war vessels, among them a ship of the line, were attacked by German airmen. On the ship of the line and a destroyer hits were observed. The Russian Fleet hastily steamed away in a northerly direction."

Berlin, Sept. 29th.

"In Flanders two English aeroplanes have been shot down. The occupants were taken prisoners."

Berlin, Sept. 30th.

"Two Russian aeroplanes were shot down."

Berlin, Oct. 1st.

"French aviators bombarded Henin and Lieterard, killing eight French civilians. We suffered no losses.

"The number of prisoners taken in the Eastern war theatre by German troops during September and the amount of other booty is 421 officers, 95,464 men, three guns, 298 machine-guns, and one aeroplane."

Berlin, Oct. 2nd.

"An enemy aerial squadron from Paris, attacking Laon, killed one woman and one child and severely wounded a civilian. Our anti-aircraft guns shot down one of the aeroplanes south of Laon, the occupants being taken prisoners. Another enemy aeroplane fell to the ground on fire at Soissons."

Berlin, Oct. 3rd.

"In the Rethel district the French airship 'Alsace' was forced to make a landing. The crew were taken prisoners.

"To-day at 8.30 a.m. bombs were dropped by French aviators on the neutral city of Luxemburg. Two Luxemburg soldiers, one workman, and one shopgirl were wounded."

Berlin, Oct. 4th.

"Last night one of our airships successfully bombarded the railway station at Chalons, which is the chief point of concentration for the reserves of the French attacking forces."

Berlin, Oct. 5th.

"Enemy aviators dropped bombs on the village of Biache St. Vaast, north-east of Arras. One inhabitant was killed; otherwise no damage was caused."

Austrian.

Vienna, Sept. 30th.

"In the moorland near Kormin . . . two hostile aeroplanes were shot down."

THE BRITISH AIR SERVICES.

Royal Naval Air Service.

THE following appeared among the Admiralty announcements of the 29th ult. :—

Temporary Sub-Lieut. (R.N.V.R.) W. P. Nicholls entered as Probationary Flight Sub-Lieutenant, for temporary service, with seniority of Sept. 28th, and appointed to "President," additional, for R.N.A.S.

The following appeared among the Admiralty announcements of the 1st inst. :—

The undermentioned have been entered as Probationary Flight Sub-Lieutenants, for temporary service, and appointed to the "President," additional, for R.N.A.S., to date as stated: C. H. FitzHerbert, Oct. 3rd; G. A. Maclean, Oct. 2nd.

The following appeared among the Admiralty announcements of the 2nd inst. :—

Temporary Sub-Lieuts. (R.N.V.R.) M. R. Buckland and G. N. Lindeman both entered as Probationary Flight Sub-Lieutenants, for temporary service, with seniority of Oct. 1st, and appointed to "President," additional, for R.N.A.S.

Temporary Hon. Lieut. (R.M.) C. J. Murfitt granted a temporary commission as Lieutenant (R.N.V.R.), with seniority of Oct. 1st, and appointed to "President," additional, for duty with the R.N.A.S.

Royal Flying Corps (Military Wing).

THE following appeared in a supplement to the *London Gazette* issued on the 29th ult. :—

Flying Officers.—Aug. 26th, 1915: Capt. J. A. Chamier, 33rd Punjabis, Indian Army; Lieut. G. S. M. Ashby, R.A., and to be seconded; temporary Lieut. G. B. Hobbs, the Northumberland Fusiliers (since deceased). Sept. 7th, 1915: Capt. A. C. Boddam-Whetham, Princess Louise's (Argyll and Sutherland Highlanders), and to be seconded; temporary Capt. R. G. Blomfield, Surrey (Queen Mary's Regt.) Yeomanry, T.F.; Second Lieut. W. E. Collison, Special Reserve; Sept. 13th, 1915.

The following appeared in a supplement to the *London Gazette* published on the 2nd inst. :—

Equipment Officers.—Capt. R. C. Donaldson-Hudson, T.F.R., from an Assistant Equipment Officer; Lieut. G. C. R. Mumby, Special Reserve, from an Assistant Equipment Officer, and to be temporary Captain whilst so employed; Second Lieut. M. Spicer, Northamptonshire Regt., from an Assistant Equipment Officer, and to be temporary Captain whilst so employed; Capt. A. F. A. Hooper, Prince of Wales's (North Staffordshire Regt.), from a Flying Officer; and Lieut. H. Burchall, Special Reserve, from an

Assistant Equipment Officer, and to be temporary Captain whilst so employed. Sept. 1st, 1915.

Assistant Equipment Officers.—Temporary Second Lieut. H. T. Tizard, R.A., and to be transferred to the General List; July 2nd, 1915. Second Lieut. (temporary Capt.) C. G. Martyn, Monmouthshire Regt., T.F., and Lieut. F. A. Klipsch, T.F.R.; Aug. 21st, 1915. Lieut. J. Sampson, Dorsetshire Regt., and to be seconded; Second Lieut. C. W. Willcox, Special Reserve; and Second Lieut. H. Lee, Special Reserve; Sept. 3rd, 1915. Lieut. J. B. Bolitho, Devonshire Regt., and to be seconded; Sept. 5th, 1915. Second Lieut. D. Hodgson, Northern Cyclist Batt., T.F.; Second Lieut. C. H. Morgan, Special Reserve; and Second Lieut. C. E. Holaway, Special Reserve; Sept. 15th, 1915.

Supplementary to Regular Corps.—Second Lieutenants (on probation) confirmed in their rank: William E. Collison, Henry I. F. Yates, Charles W. Snook, Richard Yates, and Leonard F. Hursthouse. Kenneth Mathewson to be Second Lieutenant (on probation); Aug. 20th, 1915.

The following appeared in a supplement to the *London Gazette* issued on the 4th inst. :—

Supplementary to Regular Corps.—Second Lieut. (on probation) Edward S. Skipper is confirmed in his rank.

The following appeared in the *London Gazette* of the 5th inst. :—

Flight Commander.—Lieut. Robert Loraine, Special Reserve, from a Flying Officer, and to be temporary Captain whilst so employed. Sept. 15th, 1915.

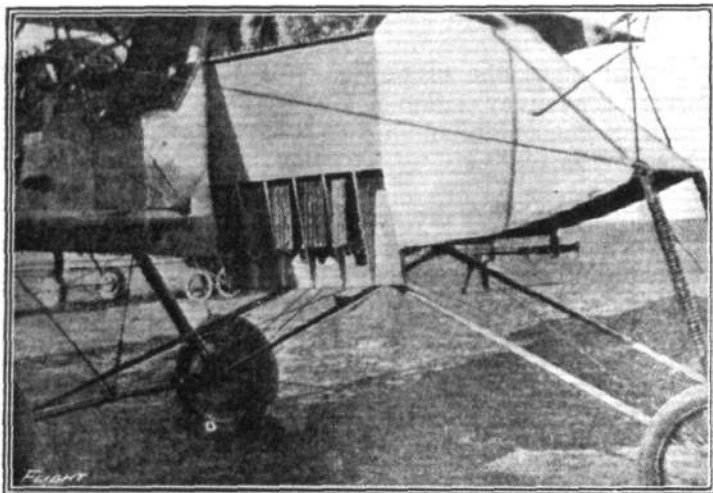
Flying Officers.—Sept. 11th, 1915: Temporary Lieut. G. H. Norman, R.A., and to be transferred to the General List; temporary Lieut. R. S. Maxwell, Army Cyclist Corps, and to be transferred to the General List; Second Lieut. J. A. Crook, Special Reserve. Sept. 14th, 1915: Capt. Robert G. Cherry, R.A.; Capt. Steele Hutcheson, 3rd Brahmans, Indian Army; Lieut. George Wenden, Border Regt., and to be seconded; Lieut. Ernest J. Strover, 3rd Brahmans, Indian Army; Major T. C. R. Higgins, King's Own (Royal Lancaster Regt.); Second Lieut. H. F. Moore, West Lancashire Divisional Train, A.S.C., T.F.; Second Lieut. J. Temperley, Northern Cyclist Batt., T.F.; Second Lieut. C. A. A. Hiatt, Norfolk Regt., and to be seconded; Second Lieut. C. W. Snook, Special Reserve; Second Lieut. L. F. Hursthouse, Special Reserve. Lieut. S. T. L. Greer, R.F.A., T.F.; Sept. 15th, 1915. Sept. 16th, 1915: Temporary Capt. J. H. S. Tyssen, North Somerset Yeomanry, T.F.; Second Lieut. H. I. F. Yates, Special Reserve; Second Lieut. R. Yates, Special Reserve.

Supplementary to Regular Corps.—Lieut. Archibald B. Ford resigns his commission. Oct. 6th, 1915.

THE VOISIN WARPLANE.

ATTENTION has been called, from time to time, in our columns to the use made by our enemies of captured French machines for school and other purposes. Thus, it may be recollected, we have given illustrations of a captured M. Farman decorated with the black cross that forms the identification mark of all German military machines.

Among the various types captured by the Germans have also been one or more Voisin biplanes, a fighting machine that has found great favour with our



Nacelle of the Voisin fighting biplane. Note the bomb-dropping arrangement on the side.

allies across the Channel, who have made, and are making, very extended use of it. As the accompanying illustration, reproduced from *Flugsport*, shows, the Germans have succeeded in capturing one of these machines intact, and are now employing it for teaching pilots the handling of a type which was considered by their military experts obsolete until French pilots gave practical proof to the contrary. The accompanying scale drawings, which we reproduce by courtesy of our New York contemporary, *Aerial Age*, and the following description by Mr. Walter H. Phipps, should give a good idea of the general arrangement of this successful French fighting biplane.

"The Voisin gun-carrier, which is the subject of our description this week, is one of the most interesting developments of the European war. It is a type which is rapidly finding favour for offensive purposes, as its size and weight-carrying ability, coupled with its great range of vision and unobstructed mounting for a large machine gun, make it a terror to all machines coming within its range.

"The machine is chiefly characteristic on account of its all-steel construction, a feature which, contrary to previous accepted theory, has found great favour for military work on account of its not being affected by climatic conditions. Other outstanding characteristics of the Voisin machine are the excellent four-wheel shock-absorbing chassis, the small gap between the planes, and the large balanced elevator in the rear.

"The chassis, which is quite different to those fitted to other machines, consists of two sets of wheels, one pair mounted on a single axle at the extreme front of the machine and connected to the nacelle by long telescopic spring absorbers, the other pair directly under the rear main beam and similarly connected by means of shock absorbing telescopic springs to the rear end of the nacelle. This provides a most excellent landing gear for military work, where landings must frequently be made on very rough ground without fear of capsizing.

"The nacelle or body is built up in the usual way, the construction being mainly wood with steel for the engine and chassis bearers and braces. It provides accommoda-



A captured French Voisin biplane being used by the Germans for school work.

tion for pilot and observer, the former sitting in front with the observer directly in back of him.

"Supported by steel tubes and immediately over the pilot's head is the gun, so mounted that it can easily be handled by the observer, who stands up when working the gun.

"A sloping dash in the nose of the nacelle deflects the air above the heads of the occupants. Behind the pas-

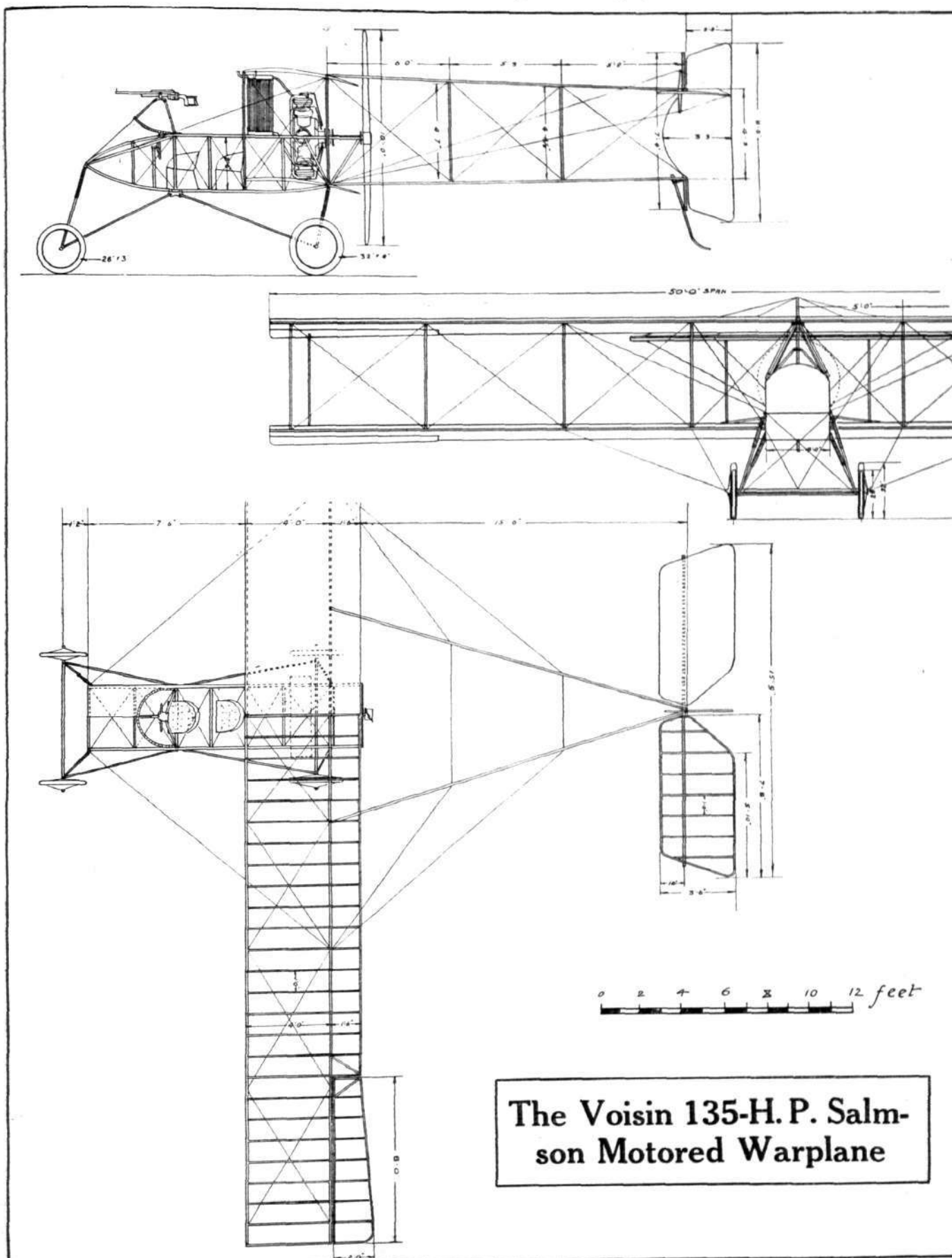


Photograph reproduced from *Flugsport* showing how the Hotchkiss gun is mounted above the head of the pilot in the Voisin biplane.

senger's seat and inside the *nacelle* is mounted a large gasoline tank, sufficient for over 5 hours' flight.

"The engine, 135 h.p. nine-cylinder water-cooled

Salmson, is mounted between double bearings in the rear of the *nacelle* and drives through a long extension shaft a large diameter propeller which revolves behind the main



The Voisin 135-H. P. Salmson Motored Warplane

THE VOISIN BIPLANE.—Plan, side and front elevation to scale.

planes. The engine can be started from the passenger's seat by means of a starting handle.

"The main planes, which have a comparatively small gap in relation to the chord, are built up of wooden ribs over steel tube spars. Inter-connected *ailerons* are fitted to both upper and lower planes, and the chord of the *ailerons* is greater at the tip than at their inner ends in order to render them more efficient.

"The elevators, which are of tremendous size, are carried on an outrigger formed of four steel tubes, and are unusual in that the elevators, which are of the balanced type, are supported rigidly at only one point on the outrigger, the remainder of the bracing being carried out by wires running to the bottom of the outriggers, and to a short mast on top. Mounted on the rear vertical tube of the outrigger is the large balanced elevator, which is unusual for its great length compared to breadth.



CONSTRUCTIONAL DETAILS.—V.

HAVING dealt in previous issues with strut sockets and *fuselage* joints, our full page of sketches of constructional details this week illustrates some of the more commonly employed sections of main wing spars. Perhaps in no other component part of an aeroplane is the question of strength of such paramount importance as in the case of the members that support the weight of the machine when in the air. The nature and magnitude of the stresses to which a wing spar may be subjected are not yet fully known, or at least not available in published form. Experiments have been carried out at the N.P.L. and methods devised for the calculation of the stresses in the wings and bracing of an aeroplane, the method of "strain energy" having been developed and applied for this purpose, but as the yearly report has not yet been published, the results of these experiments are not immediately available. From the selection of sections employed by leading manufacturers illustrated by the accompanying sketches our readers should, however, be able to form a very fair idea of current practice in the design of a wing spar. It should be pointed out that the sections illustrated were in most cases those that were current practice before the war, as at the present moment it would obviously be unwise to describe in detail such



No British Air Minister.

IN a written reply to a question put in the House of Commons by Mr. King, the Prime Minister stated that a separate Ministry for air purposes is not in contemplation.

Aeroplane Work Along the Tigris.

IN the review of the operations on the Tigris issued by the Secretary of State for India on September 30th there was the following:—

"On the morning of the 29th the enemy's position was found unoccupied, while aeroplane reconnaissance showed the Turks in flight by river and road towards Baghdad. One of our aeroplanes succeeded in dropping bombs on a large enemy steamer."

New Lighting Regulations.

UNDER the restrictions of the new Order regarding the use of lights in London, which came into force on the 1st, a more desirable state of affairs, from whichever point of view one looks at the subject, now prevails as regards street lighting, shops and house lights, the lighting of railway carriages, motor and other vehicles, &c. The Order applies to the City of London, the Metropolitan Police District, and it revokes the previous order of July 31st, 1915. It states that in case of a sudden emergency all instructions given by the Admiralty, as to the further reduction or extinction of lights, must be immediately obeyed.

Air Raid Damage and German Assets.

IN the House of Commons on the 30th ult., Mr. Shirley Benn asked the Prime Minister if he would consider the advisability of

"A refinement worth noticing are the wheel brakes fitted to the rear wheels.

"By means of these brakes, which are operated from the pilot's seat, the machine can be held back by the pilot, whilst running the engine all out, so that it is possible by the aid of these brakes, and the starting handle behind the passenger's seat, to start the machine without any outside assistance whatever, a feature which should prove useful for cross-country work where, after having made a forced landing *en route*, experienced assistants are not always available, and where the help of inexperienced, though willing, assistants may easily cause considerable damage to the machine. Another advantage of the wheel brakes is that on making a landing in restricted grounds this machine can be brought to a standstill, where others would probably be wrecked by running into obstacles."

innovations as have resulted from experience gained by, and the lessons learned from, the arduous work performed by our aeroplanes on active service.

Three of the spars shown, Nos. 3, 4 and 5, were tested by Mr. Alec Ogilvie, at Eastchurch, and of these spar No 4, which is, by the way, similar to those employed in the Maurice Farman and other machines, proved by far superior to the other two. Where the leading edge of a wing forms at the same time the front spar, this member must be designed to carry its share of the load, and an example of how this may be accomplished is shown in No. 11. It should be clearly understood that where hollow or I-sections are employed it is general practice to leave the spar solid at the points where are attached the inter-plane struts and internal compression struts of the wings. In hollow spars—other than those of I-section—the whole spar is frequently strengthened by binding it with fabric, especially where the spar consists of two halves joined up with a fillet of hard wood.

In the case of the German spars shown, it has not always been possible to ascertain the name of the manufacturer, nor the kinds of woods employed, but they have been included to show the sections.



introducing legislation to enable the Public Trustee to pay out of moneys belonging to German citizens all damages done as a result of air raids to private property of British citizens situated in unfortified places.

Mr. Asquith: The statute under which the Public Trustee holds German assets declares that the object is to preserve them with a view to arrangements to be made at the conclusion of peace, and the Government is not prepared to vary this announcement.

An Echo.

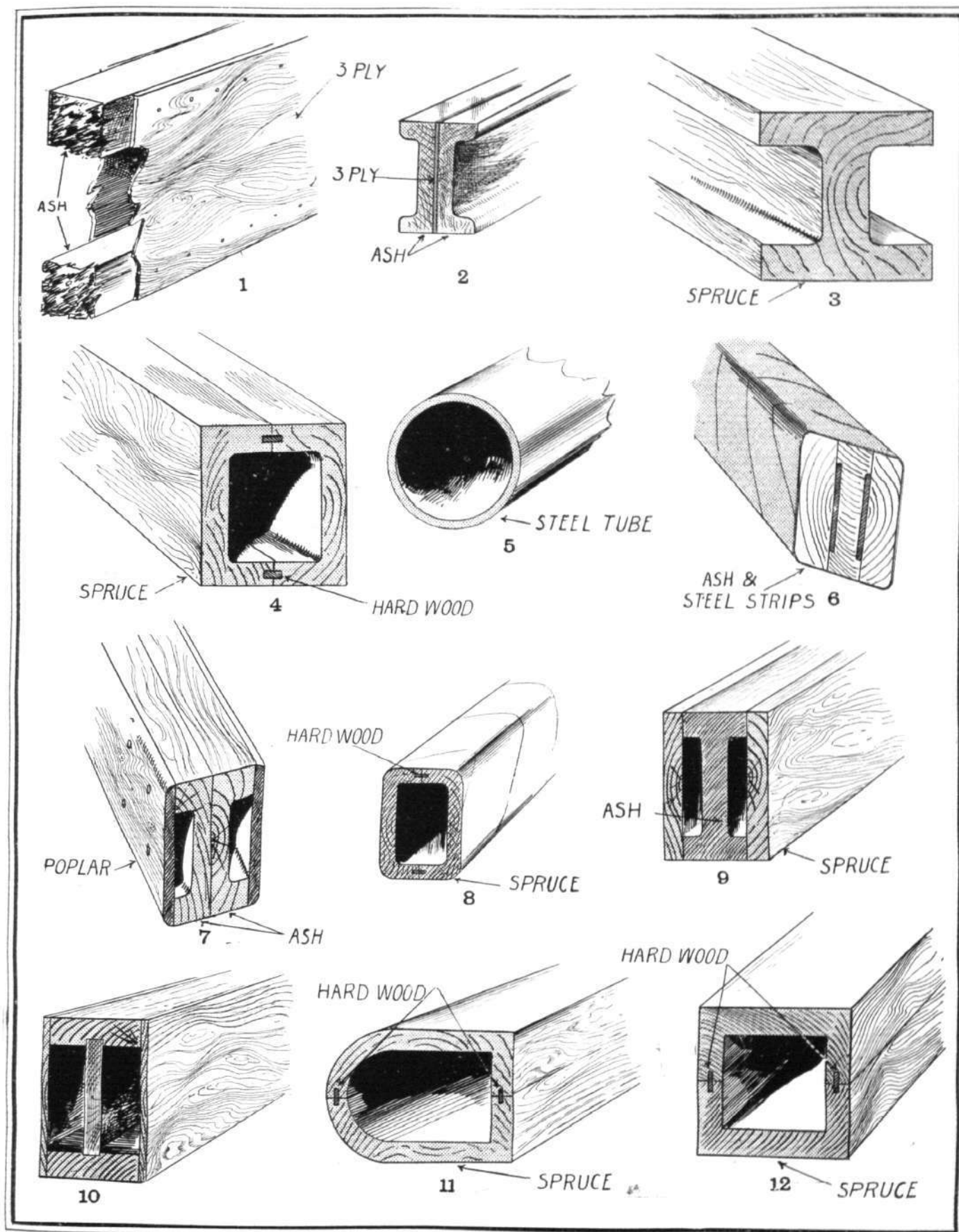
IN submitting the revised estimates for the ensuing half year to the Westminster City Council a few days ago, Alderman G. W. Tallents said that one matter of interest was that the Metropolitan Police charge has risen by £7,053, but he would like to point out that this was entirely unexpected, and due to the folly of those people who went about wrecking shops in various parts of London. For this compensation had to be paid.

The Embargo on Aircraft Fabric.

REGULATIONS will, we learn, shortly be issued by the Board of Trade, in consonance with the requirements of the Admiralty, the object being to guard against the possibility of cotton cloth suitable for aircraft reaching the enemy from this country through neutral States.

The test by which it is intended to discriminate between cloths which are unsuitable for aircraft and those which might be so applied is one of count, weight, and ratio of strength to weight. Complete details of the test will appear shortly.

CONSTRUCTIONAL DETAILS.—V.



VARIOUS SECTIONS AND MATERIALS USED IN THE CONSTRUCTION OF MAIN WING SPARS.—
 1. Martinsyde (monoplane). 2. German. 3, 4, 5. Ogilvie. 6. Caudron. 7. D.F.W. 8. German (L.V.G.). 9. Sopwith (older type). 10. German. 11, 12. Grahame-White (five-seater).

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

SPECIAL COMMITTEE MEETING.

A SPECIAL MEETING of The Committee was held on Tuesday, the 5th inst., when there were present:—Prof. A. K. Huntington, in the Chair, Mr. Griffith Brewer, Mr. Ernest C. Bucknall, and the Assistant Secretary.

Election of Members.—The following New Members were elected:—

- Flight Lieut. Anthony Rex Arnold, R.N.A.S.
- 2nd Lieut. George Osborn Hayne, R.F.C.
- Flight Sub-Lieut. Cecil Hugh Hayward, R.N.A.S.
- Flight Sub-Lieut. Stanley Kemball, R.N.A.S.
- Sub-Lieut. Wilfred Lloyd, R.N.V.R.
- Francis Steele Moller.
- Malcolm Dent Nares.
- Flight Sub-Lieut. Charles Fancourt Brandon Penley, R.N.A.S.
- Lyman J. Seely.
- Alfred Ernest Steele.
- Harry Tate.
- Capt. John Hugh Samuel Tyssen (North Somerset Yeomanry).

Aviators' Certificates.—The granting of Aviators' Certificates Nos. 1630 to 1791 was confirmed.

The granting of the following Aviators' Certificates was confirmed:—

- 1792 Flight Sub-Lieut. Gerrard William Reginald Fane, R.N.A.S. (Maurice Farman Biplane, Royal Naval Air Station, Eastbourne). Sept. 6th, 1915.
- 1793 Leslie Lindo King (Beatty-Wright Biplane, Beatty School, Hendon). Sept. 23rd, 1915.
- 1794 William John Wyatt (Maurice Farman Biplane, Military School, Farnborough). Sept. 24th, 1915.
- 1795 Colin William Jamieson (L. and P. Biplane, London and Provincial School, Hendon). Sept. 25th, 1915.
- 1796 Arnold Hunt (Maurice Farman Biplane, Military School, Brooklands). Sept. 25th, 1915.
- 1797 Samule Franklyn Leslie Cody (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Sept. 28th, 1915.
- 1798 Guy Langham Godden (Maurice Farman Biplane, Military School, Brooklands). Sept. 28th, 1915.
- 1799 William Arthur Harvey (Maurice Farman Biplane, Military School, Brooklands). Sept. 28th, 1915.
- 1800 Flight Sub-Lieut. Eric Perrin Hicks, R.N.A.S. (Grahame-White Biplane, Royal Naval Air Station, Chingford). Sept. 28th, 1915.
- 1801 Major Sidney Smith (3rd East Anglian Brigade, R.F.A. (T.F.)) (Maurice Farman Biplane, Military School, Norwich). Sept. 28th, 1915.
- 1802 Major Rudolph Edward Trower Hogg (Central India Horse) (Maurice Farman Biplane, Central Flying School, Upavon). Sept. 17th, 1915.
- 1803 Paul Bouchier Moxon (Caudron Biplane, Beatty School, Hendon). Sept. 25th, 1915.
- 1804 Lieut. William Baxter Ellis, A.S.C. (L. and P. Biplane, London and Provincial School, Hendon). Oct. 1st, 1915.

The following Aviators' Certificates were granted:—

- 1805 Capt. Donovan Maclean Rawcliffe (Manchester Regt.) (Maurice Farman Biplane, Military School, Shoreham). Sept. 13th, 1915.
- 1806 Sidney John Woolley (L. and P. Biplane, London and Provincial School, Hendon). Sept. 25th, 1915.
- 1807 Horace William Bush (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Oct. 1st, 1915.
- 1808 Alexander Thomas Watson (Hall Biplane, Hall School, Hendon). Oct. 1st, 1915.
- 1809 Paul Sydney Harold Arbon (Beatty-Wright Biplane, Beatty School, Hendon). Oct. 1st, 1915.
- 1810 Flight Sub-Lieut. Henry Victor German, R.N.A.S. (Grahame-White Biplane, Royal Naval Air Station, Eastbourne). Oct. 1st, 1915.
- 1811 Capt. Tom Algar Elliott Cairnes (7th Dragoon Guards) (Maurice Farman Biplane, Military School, Norwich). Oct. 2nd, 1915.

- 1812 John Edwardes-Evans (Maurice Farman Biplane, British Flying School, Le Crotoy, France). Oct. 2nd, 1915.
- 1813 Percy Wilmot Chambers (Caudron Biplane, Ruffy-Baumann School, Hendon). Oct. 3rd, 1915.
- 1814 William Edward Gardner (Ruffy-Baumann Biplane, Ruffy-Baumann School, Hendon). Oct. 3rd, 1915.
- 1815 Sydney Dalrymple (L. and P. Biplane, London and Provincial School, Hendon). Oct. 4th, 1915.
- 1816 2nd Lieut. Maurice Duncan Basden (London Regt.) (Maurice Farman Biplane, Military School, Birmingham). Oct. 4th, 1915.
- 1817 2nd Lieut. Guy Shaw (West Yorkshire Regt.) (Maurice Farman Biplane, Military School, Birmingham). Oct. 4th, 1915.
- 1818 (Hydro-aeroplane).—Harry Slingsby (N.A.C. Hydro-aeroplane, Northern Aircraft Co., Lake Windermere). Oct. 4th, 1915.
- 1819 2nd Lieut. Robert P. Willock (Oxfordshire and Bucks L.I.) (Maurice Farman Biplane, Military School, Birmingham). Oct. 4th, 1915.

AMERICAN CERTIFICATE.

- 343 Arthur Cyril Harland (Wright Biplane, Wright School, Dayton, Ohio). Sept. 7th, 1915.

Aeronauts' Certificates.

The granting of the following Aeronauts' Certificates was confirmed:—

- 42 Capt. Maurice Bernal Blake, R.F.C. Sept. 6th, 1915.
- 43 2nd Lieut. George Samuel Sansom. Sept. 30th, 1915.

The following Aeronaut's Certificate was granted:—

- 44 2nd Lieut. Geoffrey Charles Herbert Dorman. Sept. 22nd, 1915.

Extension of the Hours of Opening the Club.

The Club is now open from 9 a.m. to 10.30 p.m. each day, including Sunday.

THE FLYING SERVICES FUND

administered by

THE ROYAL AERO CLUB.

The Flying Services Fund has been instituted by the Royal Aero Club for the benefit of officers and men of the Royal Naval Air Service and the Royal Flying Corps who are incapacitated on active service, and for the widows and dependants of those who are killed.

The Fund is intended for the benefit of all ranks, but especially for petty officers, non-commissioned officers and men.

Forms of application for assistance can be obtained from the Royal Aero Club, 166, Piccadilly, London, W.

Subscriptions.

	£	s.	d.		£	s.	d.
Total subscriptions received to September 29th, 1915 ...	9,578	18	11	The British Caudron Co., Ltd. ...	10	10	0
Robey and Co., Ltd. ...	10	10	0	Employés of Ruston, Proctor, and Co., Ltd. (Fourth contribution) ...	1	0	0
Collected at the Westland Aircraft Works, Yeovil (Third contribution) ...	1	3	6	Frederick Sage and Co., Ltd. ...	5	5	0
Boulton and Paul, Ltd. ...	21	0	0	Total, October 6th, 1915 ...	9,628	7	5

B. STEVENSON, Assistant Secretary.

166, Piccadilly, W.

FROM THE BRITISH FLYING GROUNDS.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Straights with instructor last week; Probationary Flight Sub-Lieuts. Aplin, Davenport, Graham, Hackman, James and Till. Straights alone: Probationary Flight Sub-Lieuts. Corry, Cross, Gammon, Man and Sadler. Figure eights and circuits alone: Probationary Flight Sub-Lieuts. Biscoe and Davies.

Instructors: Messrs. Manton and Winter.

Grahame-White Civilian School.—Pupils at work during last week, with instructor on machine: Messrs. Ellis, Hughes, Mansel-Howe and Jones. Straights or rolling alone: Mr. Ellis. Figures of eight or circuits alone: Mons. De Meulmeister. Instructor: Mr. Russell.

Beatty School.—With instructors last week on Beatty-Wright machines: Messrs. Arbon (75 mins.), Baldwin (10), Bond (15), Byrne (10), Calvert (10), T. Jones (15), Theo (10), and FitzHerbert (15). On Caudron machines: Messrs. Baker (15 mins.), Begg (90), Bowick (40), Brown (24), Brynildsen (35), Campbell (14), Collett (12), Collier (50), Cowper (18), Cumming (60), Duffus (24), Fawcett (4), Gayner (32), Hodgson (50), L. F. Jones (35), Kirkwood (16), Lashmar (30), Mellings (18), Murdoch (30), Nash (12), Nicholson (18), Overton (30), Owen (10), Patterson (20), Podmore (10), Symington (10), and Tremlett (10).

The instructors were Messrs. G. W. Beatty, W. Roche-Kelly, R. W. Kenworthy, G. Virgilio and A. E. Mitchell, the machines in use being Beatty-Wright dual-control and single seater propeller biplanes and Caudron tractor biplanes.

Mr. Paul Arbon flew for his certificate on Friday, making exceptionally good *vol plané* and landings.

Exhibition flights were given on Thursday and Sunday and three passenger flights were taken.

Hall School.—The following pupils were out receiving instructions during last week:—With H. F. Stevens: Messrs. Bayley and A. Watson doing circs., 8's, *vol planés*, and landings. With C. M. Hill: Messrs. Brandon, Hall, A. Watson, B. Watson, Mason, Drew, Butterworth, Bangs, Cook, Broad, Punnett, Ackroyd, Hamer, Seward, and Stirling, all doing circuits or half-circuits. With C. Bell: Messrs. Nicolle, Dodd, Bond, Dresser, Wooley, Shum, Lieut. Bell, Evans, Manley, Arnsby, Young, and Camberbirch, all doing rolling practice or straight flights.

Royal Aero Club certificate taken by A. Watson.

London and Provincial Aviation Co.—Pupils doing rolling last week: Messrs. Law, Little, Farrow, Northrop, Dawson, Roberts and Jowett. Straights: Messrs. Medaets, Knowles, Lochett and Lewis. Circuits and eights: Messrs. Rochford, Dalrymple and Franklin.

Certificates were secured by Mr. S. J. Woolley and Lieut. W. Baxter Ellis, who both made good, steady flights.

Instructors: Messrs. W. T. Warren, M. G. Smiles, G. Irving and C. Jacques.

Ruffy-Baumann School.—Pupils doing straights: Ball, Capt. Crawford, Griffith, Sherwood, May, Bailey, Liddell, Perrins, Prothero, Gallop, Johnstone, Thomsen and Stewart. Pupils with instructor: Cuthbertson, Cole, de Graouw, Barnard and Harkness. Pupil doing circuits and eights: Chambers.

**Aeronautical Chair at Japanese University.**

IN the course of next year a chair of aviation is to be installed in the Tokyo Imperial University, the Japanese Education Department including 100,000 yen (£10,236), for the purpose, in the next

Certificate taken by Private P. W. Chambers in excellent style, altitude and *vol plané* being exceptionally good. There are now seven other pupils ready for their tickets.

Instructors: Edouard Baumann, Felix Ruffy, Ami Baumann and Clarence Winchester.

Northern Aircraft Co., Ltd.

The Seaplane School, Windermere.—There has been a lot of good work done last week. H. Slingsby passed his tests, showing excellent judgment and considerable ability.



Mr. D. S. C. Macaskie, who has recently obtained his certificate at the Northern Aircraft Company's school, Bowness, Lake Windermere.

With instructor: Benson (29 mins.), Ivybom (24), Inglis (26), Johnson (37), Linder (29), Macintyre (35), Shaw (30), Ridgway (10), and Yates (22). With instructor as passenger: Barber (26 mins.), Benson (16), Inglis (10), Johnson (10), Lawton (17), Mackintyre (45), Part (30), Reid (8), Ridgway (30), Robertson (27), Robinson (25), Shaw (11), and Yates (17). Figures of eight or circuits: Reid (23 mins.) and Slingsby (82).

Instructors: W. Rowland Ding, J. Lankester Parker, and W. Laidler.

Machine has been up over 2,000 ft. several times this week; a creditable performance for a school seaplane. Several passengers carried, including Flight Lieut. Ritchie.



year's Budget estimates. It is stated that the officers of the military and naval air services are concentrating their efforts upon their technical skill and neglecting theoretical knowledge, and it is hoped that the new arrangements will tend to remedy this.

FLYING AT HENDON



SOMEWHERE on the coast, somewhere in England, there is a *confrère* taking his ease, and what he would call a well-earned rest, who ought to be here in the office writing these notes. I make this explanation that I am not the usual Hendon Notes man, in order that I may have the opportunity of telling you, before, as the office boy would say, you "rumble" me. True to my promise to my absent friend, but inwardly somewhat ill at ease with the magnitude of my task, I started on Saturday to report the week-end at Hendon to the best of my ability. Saturday is soon disposed of—it rained in that gentle yet persistent manner so beloved of farmers at certain times of the year, but never any good for flying. Hendon was cold and dark and miserable. The ground was veiled in mist and rain, there was not a machine out nor a soul in sight. The machines I knew were in their sheds, the souls I found where souls only could congregate on such a day—I shall not disclose the identical spot.

Later in the day, the rain cleared, and machines and men appeared as from nowhere, to start school work. Together they filled the air, and were all over the ground like rabbits out for sport. I religiously started to make notes, but gave it up in bewilderment. To me it was impossible. Aeroplanes were around and all over me,

and to attempt to get any idea as to who the pilots might be was beyond me. My impression was that four hundred Caudrons were chasing school 'buses and Avros and Farmans and Beatty-Wrights all over the ground and in the air, making sudden dashes at them on the earth, and following them into the air when they tried to elude them. How ever they managed to escape colliding I don't know. This was, I am told, the usual evening school work at Hendon, and I can only say in the words from across the pond—"Gee! Some school!"

Sunday was fine, fine to the extent of making up for the previous day and some to spare. I arrived to find Moore and Hall in the air, apparently trying to fly at one another's throats, the while Virgilio and Winter circled round the pair as though rounding them up. Evidently their spirits, in the reaction from the damping effects of the previous day's rain, had risen under the influence of the genial sunshine, and they, creatures of the air that they are, bounded up to whisk and dance in its smiles.

Baumann, Roche-Kelly, and Manton were busy carrying passengers, and Osipenko roared around on the big



"Flight" Copyright.

Mr. A. E. Barrs, who is flying the Mann biplane at Hendon.



"Flight" Copyright.

Mr. A. E. Barrs returning on the Mann biplane at Hendon, after having taken her up to an altitude of 5,000 feet.

five-seater, for all the world like an elephant in a bird's cage. I am tempted to wonder how much longer is the life of this monster 'bus. It seems too heavy for the air, and too light to stay on the ground. The sight of it always engenders the thought of the hippopotamus, who, as Charles Kingsley explained in his delightful book "The Water Babies," cannot live on the land, and dies in the water.

I was pleased to see the Mann biplane emerge from its house once more after several weeks of enforced idleness owing to lack of a pilot. So many of our brave lads are away piling up great deeds to the honour of the flying services, and so many others are doing equally important work at the various schools, that pilots for private enterprise work are hard to find. In A. E. Barrs, Messrs. Mann and Grimmer have secured a pilot who, it strikes me, will justify their expectations by bringing out every good point in their machine.

Starting with a full load of fuel on board, and a

passenger in the forward seat, he set out to take the 'bus "upstairs" for a lengthy period to try her climbing powers. Unfortunately at 5,000 ft. he found it impossible to extend the climb owing to a thick fog, which entirely blotted out the ground, so contented himself with flying around at that altitude for 40 mins., during which time he found the machine handle splendidly. Descending in a fine spiral, he landed as smoothly as any one could wish.

Once more school work brought the day's flying to a close, and by this time I felt such an official observer, clothed, as Shakespeare puts it "in a little brief authority," that I "swelled wisely" like they say City Aldermen do, and if my friend and colleague stays away too long I already begin to think he may find his occupation gone.

Going to Hendon is one thing, however, and returning through darkened London is another. Howbeit, I landed safely home, after adventures of sorts, with my precious notes in my pocket. May my satisfaction thereat be reflected in those who peruse this infliction.

NEW AIRCRAFT FACTORY AT NORWICH.

THE trams at Norwich had a busy time of it on Saturday last, at least those which ran from Thorpe Station up to the vicinity of the local aerodrome. People were hanging on to any little projection that seemed to offer the slightest foothold, much in the manner of the morning rush in any good-sized American town. The conductors must have been in training for days previously under the expert supervision of a professional contortionist in order to have acquired that nimbleness which enabled them to collect the greater part of the "freight-age" to which they were entitled. The reason for this unwonted pilgrimage towards the aerodrome was that the first machine built at the works of Messrs. Boulton and Paul, Ltd., the well-known boatbuilders of Norwich, who have recently added an aeronautical department to their already very extensive works, was finished and ready for delivery. It was hoped, one read on the invitation card, that a trial flight would be possible. However, true to the best traditions of the British aeroplane industry, the machine was not quite ready, and it is to be feared that the large number of B. and P. employees present were somewhat disappointed.

Under the guidance of Mr. Doe, chief draughtsman, and Mr. Archer a few privileged visitors were permitted to inspect the new machine—an F.E. 2b—in its shed, where all were busy rigging up the controls and finishing off generally. An F.E. 2b is not a machine one would start on for choice when first entering the field of aeroplane construction, and it is therefore all the more credit to Messrs. Boulton and Paul that they have, so far as workmanship is concerned, acquitted themselves excellently of a difficult task; with the designing they had, of course, nothing to do.

We have pointed out repeatedly that the time is not propitious for detailed descriptions of anything connected with aviation, and in this respect the new Boulton and Paul works are no exception. Failing to be able to back up our statement with figures, facts and photos., we must ask our readers to take our word for it that the aeronautical department of the firm is thoroughly well organised in every respect, and one may with confidence express the opinion that before long the output will be on a scale commensurate with the high standing of this old-established firm.

More Rewards for R.F.C. Officers.

It was announced in the *London Gazette* of Saturday that the King has been graciously pleased to confer the Military Cross on the undermentioned officers, in recognition of their gallantry and devotion to duty in the field:—

Temporary Second Lieutenant HORACE SCOTT SHIELD,
Royal Flying Corps.

For conspicuous gallantry and skill when on patrol duty with Corporal T. Bennett on September 13th, 1915. When over Bois De Biez, at about 10,000 feet, he sighted a German Albatros, and at once dived and attacked it at about 7,000 feet, being subject at the time to heavy anti-aircraft gun fire. The German Albatros used a machine gun very conveniently mounted, but Corporal Bennett handled his gun with such skill that he disabled the German machine, which side-slipped and then nose-dived to the ground in our lines. Second Lieutenant Shield has been exceptionally keen in pursuing German machines whenever seen, and on this occasion he manoeuvred his own machine with admirable judgment and courage.

Second Lieutenant (Temporary Captain) ARTHUR ASHFORD
BENJAMIN THOMSON, the Royal Warwickshire Regiment,
attached Royal Flying Corps.

For conspicuous gallantry and determination on August 29th, 1915, near Neuve Chapelle. When ranging a heavy gun on the

German trenches he stayed up over two hours in heavy rain, with clouds at about 500 feet. At one time he found himself in a cloud on the far side of the German trenches, but after coming back under heavy fire he continued to observe with the greatest bravery and skill, only returning when too dark for more work. His gallant conduct resulted in ten direct hits on the enemy's parapet.

Sir John French's Thanks.

It is officially notified that the following order of the day was issued by Field-Marshal Sir John French, under date October 4th:—

"The Field-Marshal Commanding-in-Chief desires to express to Brigadier-General H. M. Trenchard, C.B., D.S.O., A.D.C., and to all ranks of the Royal Flying Corps, his appreciation of the valuable work they have performed during the battle which commenced on September 25th. He recognises the extremely adverse weather conditions, which entailed flying under heavy fire at very low altitudes.

"He desires especially to thank pilots and observers for their plucky work in co-operation with the artillery, in photography, and the bomb attacks on the enemy's railways, which were of great value in interrupting his communications.

"Throughout these operations the Royal Flying Corps have gallantly maintained the splendid record they have achieved since the commencement of the campaign."

ARMCHAIR REFLECTIONS

By THE "DREAMER."

To-day and Other Days.

It is strange how associated incidents regroup themselves under the influence of time and place.

Now that the chilly evenings are again beginning to assert themselves, and the cheerful glow of the study fire invites one to that enjoyable hour of after-dinner repose, often under its benign influence extended into the wee sma' hours, all other things previously associated therewith must need take their places in the scheme of comfort.

The light will not be switched on to discount the rosy glow of the fire. The old armchair will be used only as something to rest one's back against the while one reposes on heaps of cushions lavishly piled on the hearth-rug. No pipe but the old calabash will be large enough to contain tobacco in sufficient quantities to last out the reverie, and the glass of liquid comfort must stand inside the fender. Associated with all these things are the bound volumes of "FLIGHT," and down they must come to form a huge pile by my elbow.

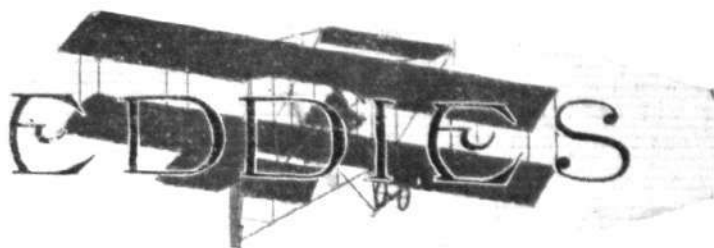
Memory is one of those queer will-o'-th'-wisp little sprites which for ever dance around us, inviting capture and investigation, yet always eluding our grasp. To be brought into play it does not require the like object or idea to recur. It comes from I know not where, reborn under the influence of I know not what. It will issue on the heels of a thought totally dissimilar; it will live again in the consciousness without any apparent reason, often bridging over years of other matters pertaining, to twinkle just one little memory-spot at us as a flash from out the depths of the past. My memory of A. V. Roe, for instance, always coming unbidden, is of him on Lea Marshes, a youngish, long-haired man, flying, or attempting to fly, a contraption of timber and paper, named "Bullseye"; my recollection of him embraces the whole of his career in aviation.

My memory of Hendon is a dreary waste of land enfolding a few sheds, my recollection takes me through the whole of its splendidly fashionable spectacular days. The recollection of my son takes me through the whole of his lifetime, up to the present, when in the service of his country he turns the scale at eleven stone, yet my memory of him is as an infant, when tied in his little chair and set out in the garden to get sunned, he overbalanced and was found with his little nose dug into the gravel.

Recollection is somewhat understandable. When I see a thing, or a place, or a happening which I have seen before, I recollect it. In some mysterious way the picture has lain latent in some portion of my brain until developed into consciousness by a repetition of events, or at least by a regeneration of some thought which shall open the sluice and allow the waters of recollection to flow, bearing on their surface the sense of recognition, whose eyes shall see, as the flood traverses the old course, every twist and turn of the way.

And so I take my volumes of "FLIGHT" and bring back to my mind the days that are gone, and marvel on men and machines, on the little happenings of those days, and the gigantic happenings of these, and I wonder, and am astounded at the progress.

I am sometimes at a loss to decide whether it is to the present day superiority of machines that we owe this progress, or whether most rests with the men. Probably both have their share. It is quite easy to argue that those things that are being done on modern machines would have been quite impossible on the old ones, and no doubt to some extent this is true, but it does not satisfy the whole question. The school 'buses of to-day are very similar to those of three years ago. Much better in construction, no doubt, but the same in principle. Three years ago, nobody would have thought of doing anything except straightforward flying on this type, yet to-day our pilots do everything with them that other machines can do, with the exception of looping. They are not so fast as others, they cannot climb so well as some, yet with these exceptions they do everything, and fly in quite a storm of wind. Engine construction has of course progressed wonderfully, and engine reliability goes a long, long way towards success. So far as the machine itself is concerned, I think some of the older flyers would surprise themselves were they to put their hands to their old mount and take her through her paces under conditions of modern knowledge. So it appears to me that engines play a great part in aviatic progress. Yet engines are not everything. Even in the old days, some engines were reliable, and yet these things were not done. Pilots did not know then the extent of their own capabilities. They did not try these things because they did not know they could be. Who, for instance, when reading the first reports of Pegoud looping and flying upside down in France believed it? How many of all those who travelled to Brooklands to see it "in the flesh" but went quite prepared in their own mind to detect a fraud? "He does it at an enormous altitude" it was said on all sides. Of course, at that height it is impossible to tell with any degree of certainty whether a machine really turns over or not. Machines get into such queer positions in the air at times, that, even at a low altitude, it is quite impossible to tell whether they are coming towards you or going away, and at times, especially with a Maurice Farman, a sudden twist in the air makes a machine appear to turn right over. Even after the show there were many people who did not know for certain whether they had seen Pegoud turn over or not. We know now. On one afternoon five Hendon pilots looped the loop in succession for the first time. So it appears that the men have as much to do with progress as engines and machines. Engines are more powerful and more reliable, machines are better in construction and in design, giving greater speed and better controllability, but weighing the matter all round, I am inclined to say that it is with the pilots themselves that the greater progress rests. These thoughts bring recollections of things that invite me to ramble on and write pages, but the space—unlike the realm of our art—at my disposal is limited, the fire is burning low, it is quite bedtime, and—my glass is empty.



FISHING for submarines from an aeroplane sounds like Jules Verne at his best. Yet according to our New York contemporary *Aerial Age*, this method is seriously



Photo. by Miss Dorothy Brown.

A Reminiscence of the late Second Lieut. Pegoud.—Pegoud and his mechanic at Hardelot, P. de C., September, 1913, just one week after he had "looped the loop" for the first time in the world's history.

suggested in attractive phraseology, by Mr. Thomas E. Lake, who is, quoted by that journal as follows:—

"One man in an aeroplane can destroy a submarine in less time than it takes to hook and gaff a weakfish or a bluefish, and the method is much the same.

"Instead of trawling from the deck of a sloop or schooner with a silk line and live bait, you use an aeroplane, a controlling device, the secret of which I am not prepared to divulge as yet, and instead of live bait a contact bomb of terrific explosive force.



Photo. by Miss Dorothy Brown.

Reminiscences of the late Second Lieut. Pegoud.—Pegoud just making his start for Paris in his Blériot, September, 1913.

"The aeroplane skims over the sea with a bomb suspended from the controlling device, some distance above the water. Now, contrary to the belief of many persons, a submarine does not travel beneath the surface all the time. Consideration of the life of her

storage batteries, air for breathing and speed make it desirable to travel at the surface whenever practicable without risk of discovery by the enemy.

"A submarine generally travels at the surface, or in the 'awash' condition, until in the vicinity of her intended attack. When within a reasonable distance of her victim she submerges so that only a few feet of water is above the periscope. In this condition she would lay in wait for or proceed toward her enemy, from time to time raising her periscope above the surface to direct her course and to aim her torpedo.

"When thus submerged she would be invisible to a surface ship, but could be detected from above. The air scouts claim that even when a submarine dives very deep they can see a dark patch in the water and at least give warning to a surface ship that the undersea terror is near.

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"Assuming that a submarine had been located by the operator of an aeroplane, even though the craft were a considerable distance below the surface of the water, he would lower the bomb, allowing it to trail about fifteen or twenty feet above the water.

"Then he would direct his course so that the aeroplane would cut across just ahead of the submarine, meanwhile reducing his speed as much as possible, for speed at this juncture would be a distinct disadvantage.



Photo. by Miss Dorothy Brown.

Another reminiscence of the late Second Lieut. Pegoud.—Pegoud, in September, 1913, starting a Blériot belonging to M. Blériot at Hardelot, where the famous builder of these aeroplanes has a villa.

"When about to cross the submarine's path, the aviator would release the controlling mechanism, allowing the bomb to fall into the water and sink. This brings the wire in contact with the periscope or any other projection of the submarine, and the bomb would thus be drawn against the side of the craft and explode on contact, the wire being automatically released from the control mechanism.

"It takes more time to explain this attack than it does to execute it. In practice it would occur so quickly as to give absolutely no warning to the submarine, destroying her and her crew. They would not have the slightest chance to escape or to know what had happened to them.

"The hopelessness of trying to drop unattached bombs on a submarine, either submerged or at the surface, considering the velocity at which an aeroplane travels, will be apparent, but with the trawling device the thing is simpler. In dropping a free bomb it is necessary to strike the craft with the missile itself. In trawling, once the wire fouls the submarine the bomb is certain to find its mark, and it will explode when it strikes and not before."

The suggested scheme sounds fascinating, but one or two "nigger" problems rise into prominence without much effort, the solution of which should prove interesting. Perhaps the author will open out a little and volunteer a few more details as to why and how.

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I have in front of me an interesting little booklet by Mr. O. W. Thomas, of the Thomas Brothers Aeroplane Co., U.S.A., entitled "Instructions in Aviation for Beginners," and from the pages of which I have extracted much interesting information. Although, as the title implies, the contents are of an elementary nature, the would-be aviator may gain from a perusal of its pages a very fair insight into the theoretical as well as the practical side of flying. The matter contained between the two grey covers of the booklet strikes one as being both quantitatively and qualitatively just sufficient to arouse the reader's thirst for more information on the fascinating subject of aviation, and at the same time it furnishes by its lucid explanations of the fundamental principles of mechanical flight a basis for further study. In the introduction the author compares the relative risks of motoring in its various forms, fast motor boating, and flying, and he comes to the conclusion that for travelling at high speeds the aeroplane is by no means more risky than the other forms of locomotion, rather the reverse.

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The opening chapter deals in a very clear and concise manner with the essential parts of an aeroplane, their functions, and the stresses to which they are subjected. In the chapter on inspection of the various parts is found a useful list of questions a pilot should ask himself before starting on a flight. Next comes a brief description of what a pupil has to practise during his training, followed by a chapter on the fundamental laws that govern flying. A chapter on air structure gives the prospective aviator an idea of the peculiarities of the element in which he is to disport himself, and the chief difficulties of cross-country flying are enumerated under a special heading, whilst some useful tables are given of corrections for drift, radii of vision, radii of glides, and

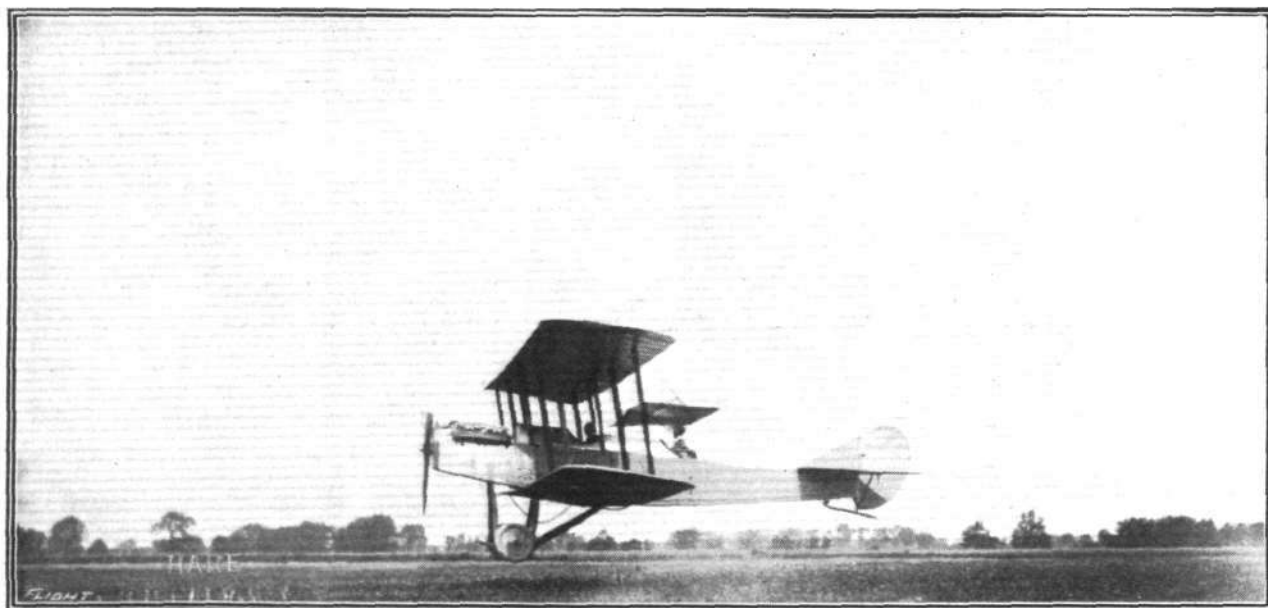
altitude and barometer reading. Perhaps the portion of the booklet that will prove most useful to the beginner in practical flying is that which deals with accidents, their cause and prevention. The most frequent "tight corners" into which every aviator gets sooner or later are enumerated, and some very sound words of advice are given as to the best methods of getting out of them. Those of our readers who are really interested may obtain a copy of this useful booklet by writing to Mr. O. W. Thomas, "The Croft," Denbridge Road, Bickley, Kent. Don't miss it.

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When down Holborn way the other day I popped in to have a chat with Mr. D'Olley Benningfield and his co-worker Mr. C. P. Walker, just to see how they were getting on with that new machine of theirs. I found Mr. Walker busy at his drawing table getting out the last few detail drawings for the new 'bus, while Mr. Benningfield gave me a practical demonstration of how to be happy though sticky, by greeting me with a smile on his face and glue on his fingers, through putting the finishing touches to a scale model of the B. & W. machine. Judging from the model and the general arrangement drawings of the B. and W., the sponsors have succeeded in designing an aeroplane full of originality and yet not freakish, and if South Africa does not look smart there is a possibility that she will lose her chance of financing the first original South African-designed fighting biplane, as I understand several enquiries have been received already. An interesting model for demonstration purposes of Mr. Walker's transmission gear gives a very clear idea of the principle on which it works, and if, as Mr. Walker assures me, sufficiently strong and yet not exorbitantly heavy clutches can be constructed for a full-size machine, this gear should prove very useful to any designers of twin engine 'buses, who are in doubt about the form of transmission to employ.

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A few particulars are now to hand of Audemars' recent attempt on the world's altitude record. Starting from Issy-les-Moulineaux on a Morane-Parasol monoplane, 80 h.p. Le Rhone engine, he quickly disappeared from



LANDING.—The 160 h.p. model R,2 Curtiss military tractor, which on its official test flight attained a speed of 90 m.p.h., and climbed to 8,200 feet in 26 minutes, with a load of 1,030 lbs., made up of four men, 4 hours' supply of petrol and oil, and sand to represent weight of bombs.

view, and when he landed 1 h. 45 m. later at Villacoublay the two barographs which he had carried registered 6,600 m. and 6,700 m. respectively. M. Nicolleau acted as official observer on behalf of the *Aéro Club de France*, and M. Jules Richard, official judge, after making allowances for inaccuracies in the working of the altimeters, fixed the height attained by Audemars at 6,540 metres. Whether this really constitutes a world's height record or not is perhaps a debatable point, since the German pilot Oelerich, on a D.F.W. biplane, reached an altitude of 8,150 metres at the Lindenthal Aerodrome, Leipzig, on July 14th, 1914. So far as is known, however, this record was not homologated by the *Deutscher Luftschiffer Verband* before the outbreak of war, and therefore one may perhaps be justified in considering Audemars as the present holder of the world's altitude record, although a considerably greater height has undoubtedly been attained by Oelerich.

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During his flight Audemars suffered severely from the

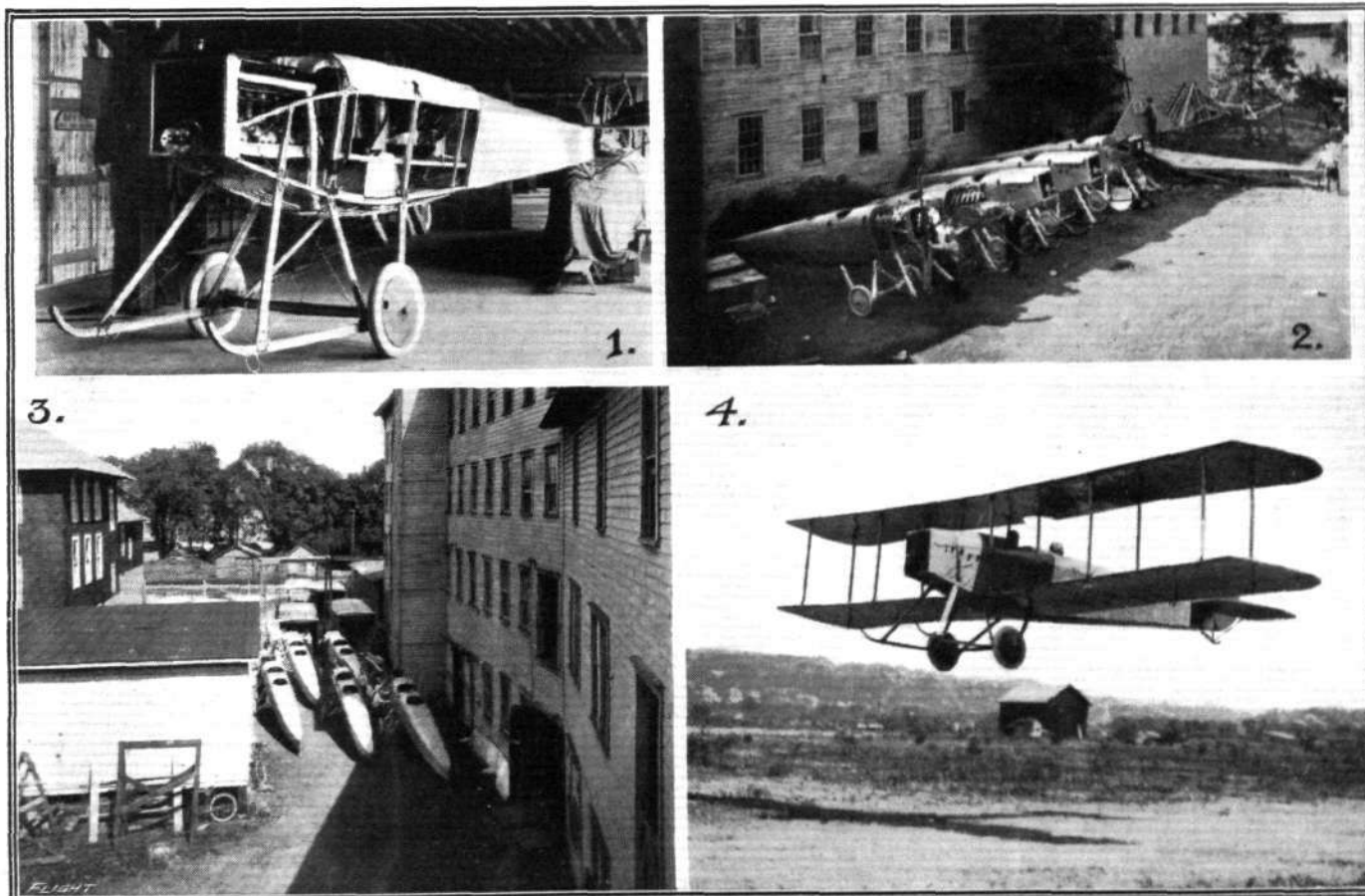
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THOMAS DEVELOPMENTS.

DIFFICULT as has been, up to comparatively recently at any rate, the path of our aeroplane constructors, that of our American cousins has been even more so. Not only has their Government utterly failed in the past to realise the importance of developing the fifth arm, but in addition to this lack of encouragement on the part of the Government, there have been other obstacles, with the consequence that American constructors had the greatest difficulty in obtaining financial backing for developments,

intense cold existing at such high altitudes, and for some time after his landing he seemed in danger of having his feet frostbitten. It was only after a vigorous treatment that circulation was restored. Nevertheless, Audemars will not long rest satisfied with his achievement, and I shall not be in the least surprised to hear before long that the energetic little man had bettered his present performance. In the next attempt he means to carry a supply of oxygen with the aid of which he should be able to considerably improve his record. M. Edmond Audemars, who was born at Geneva on the 3rd of December, 1882, will perhaps be best remembered in this country for his somewhat sensational flights of the diminutive Santos Dumont "Demoiselle" monoplane, the small size and unusual appearance of which gained for it at the early flying meetings in England the very apt nickname "The Infuriated Grasshopper." Audemars has now for some years been a staunch believer in the capabilities of the Morane-Saulnier monoplane.

"ÆOLUS."



FROM THE ITHACA WORKS OF THOMAS BROTHERS AEROPLANE CO.—1. Fuselage of a Thomas military tractor. 2. A batch of Thomas fuselages ready for the wings. 3. Fuselages ready for shipment. 4. Thomas military tractor going through preliminary tests at the Ithaca flying ground.

subsistence up to the beginning of 1914. Then the works were transferred to Ithaca, N.Y., where excellent facilities were available, and various types of machines were produced, including land-going tractors and pushers, as well as flying boats.

When the war broke out, the output of machines was about one every three weeks, but realising the increasing demand which was likely to be the result of the war, considerable extensions were made and extra machinery installed, so that in the course of a few weeks the output had been increased to one machine per week. As the demand soon exceeded this figure, the capacity was increased to two machines per week, which is, we believe, the present output, but, should necessity arise, this can be easily increased to five machines per week.

The whole lay-out of the Thomas factory has been planned with a view to facilitating as much as possible the manufacture of parts in quantities and the rapid assembling of machines. As the wood comes from the mills it is distributed to the various departments, such as wing, fuselage, chassis and wood finishing departments. The wing frames and control surfaces are then transferred to the covering and doping shop, whence they travel to

the assembling room on the ground floor. Here the machines are erected prior to being taken out to the flying ground for preliminary tests.

The fuselages and under-carriages are erected and covered in the fuselage assembling room, and are then passed on to the final erecting shop where radiators, tanks and motor are installed. The metal workshops form a special group from whence the fittings are distributed to the respective departments. After being tested the machines are dismantled and put into their crates ready for shipment, which is greatly facilitated by the location of the factory, which is such that the packing yards adjoin the railway, and thus allow prompt shipment to eastern or western ports.

In addition to the works, the Thomas school of aviation, which is under the same management, but is an independent company, is busily engaged training volunteers for the air services, for which they have exceptional facilities, since apart from the aerodrome close to the works, pupils can if desired be trained on waterplanes over Lake Cayuga.

Further developments, both as regards new machines and in other directions, are well on the way, but regarding these no information may be published at present.

THREE WEEKS' WORK OF THE R.F.C.

The following vivid picture of the way the Royal Flying Corps does its work was written for the Daily Express by Mr. Percival Phillips, their special correspondent at the General Headquarters of the British Army in the Field, under date of September 20th:—

"Forty aeroplane fights in eighteen days!

"This is the record of the Royal Flying Corps with the British army in the field during the first three weeks of September. Forty battles in the air fought with machine guns and revolvers, a mile and a half to two miles above the stagnant trenches in Flanders and Northern France.

"Four enemy aeroplanes are known to have been destroyed; at least seven others were sent hurriedly to earth and are believed to have been destroyed, and all the survivors were chased ignominiously into their own country.

"This is not an attempt to glorify our flying men unduly, but to give some idea of the work they have done during the so-called 'quiet' days along the British front. Many thrilling stories of these life-and-death struggles in the sky can be found behind the brief official reports of the Commander-in-Chief of recent victories won by British pilots and their passengers.

"It is a rule of the Royal Flying Corps that no names shall be mentioned in describing any of the deeds done by its members. I appreciate the motive, but regret nevertheless that I cannot reveal the identity of some of these modest heroes; for example, of the young pilot who, single-handed, has already brought down and destroyed six German aeroplanes, two of them in one day.

"Strenuous Work.

"Here is the official record of encounters with the enemy since the beginning of the month:—

Date.	No. of Encounters.	Date.	No. of Encounters.
1st	2	10th	5
4th	1	11th	1
5th	9	12th	5
6th	2	13th	4
7th	5	14th	1
8th	2	18th	2
9th	1		

"The majority of these engagements have been over the German lines or behind them, and three of the enemy machines known to have been destroyed fell in the rear of their trenches. The fourth—a fine new Albatros—was brought down in our territory badly riddled with bullets, but the aeroplane was not materially damaged.

"Of late the German flying men have lost their taste for extensive reconnaissance over the Allies' positions. The Albatros shot down was far beyond the protection of its own anti-aircraft guns. British scouts continue to make daily tours above the enemy trenches, and their opponents mainly exert themselves in trying to drive them off or to lure them well within range of the high-angle guns which specialise in aeroplane marksmanship.

"Many encounters have been inconclusive. A British aeroplane sailing due east over German entrenchments is challenged by an

Aviatik or an Albatros. The latter circles round the intruder trying meanwhile to bring his machine gun into action. The British pilot opens with his own gun. There are several sharp spurts of firing, and the wings of both machines are cut by bullets.

"Pilot's Five Fights.

"Imagine the situation of a British pilot who is flying alone in one of the small light 'scout' machines. He must steer and manoeuvre with one hand and fire a machine gun with the other. The fragile high-powered 'scout' requires delicate handling; the slightest mistake might mean immediate disaster. Yet there has been more than one instance of a one-man 'scout' engaging and defeating or beating off a more powerful enemy after a series of fantastic, and, to inexperienced eyes, seemingly impossible evolutions at a dizzy height.

"One pilot had five fights in one morning. He beat off the first four German machines that came up to grapple with him, one after the other, but when the fifth bore down on him he had exhausted all his machine gun and revolver ammunition. Instead of retreating to safety he boldly turned and dived to meet the enemy, holding his empty pistol as though ready for action.

"The noise of the engines drowns the report of a revolver, and the German pilot who saw him go through the motions of aiming and firing did not realise that the weapon was useless. The German fired twenty or thirty rounds, and then gave it up. The British airman finished his reconnaissance in peace, and came back to lunch.

"One furious battle in the air, witnessed by thousands of soldiers, and resulting in the total destruction of the German aeroplane, took place on September 7th. This machine had been particularly active in 'rang'ing' the enemy guns. It could be seen circling and signalling above some of our positions.

"A British B.E. aeroplane went out, and gave battle at 9,000 feet over the German lines. It was a clear bright day, and the two aeroplanes were very distinct as they darted across the sky and back again like angry birds, now climbing, now gliding, and all the while pelting each other with bullets. They gradually came lower and lower. The troops on both sides watched the deadly struggle; it was one of the most thrilling episodes of the year.

"Suddenly the German aeroplane was seen to dive erratically. It came down, down, at increasing speed, and at a tragic angle. 'We cannot say positively that it was destroyed,' said the officer, who told me of this incident, 'but when last seen it was diving nose downwards, at 150 miles an hour, about 200 feet from the ground.'

"There were four other engagements on the same day, and in every instance the Aviatik was beaten off. One British pilot, who suddenly found himself heavily handicapped, worsted his enemy by a clever 'bluff,' which I shall not describe. . . . His opponent may have been a brave man, but he was certainly a fool.

"Another battle, which ended in the annihilation of the German machine, took place on September 5th. The British aeroplane was flying at 9,000 feet when the enemy was sighted approaching at

7,500 feet. The British pilot obligingly dropped in order to get into action without delay. There was a brisk, ding-dong business of machine guns and revolvers; then the German staggered, slanted over to an 80 degrees angle, and dropped, blazing like a bonfire.

"A 'Pleasing Explosion.'"

"Aeroplanes have not been our only prey. A German observation balloon—one of those fat sausage shaped affairs that swing at the end of steel cables—was attacked recently. One of our pilots flew around it at 2,000 feet, to the apprehension of the observers in the car, who immediately signalled to be hauled down. The balloon was slowly descending when a shell dropped on the gasbag, accelerating its speed tremendously, and there was a pleasing explosion.

"The pursuit and destruction of the Albatros previously referred to, which took place on September 13th, was another very spectacular episode witnessed by many soldiers and civilians.

"The Albatros ventured into the Allies' territory about 10 a.m. One of our pilots (you may hear his name some day) pursued it steadily, and although the Albatros ducked and tacked it could not escape. The observer worked his Maxim repeatedly, but British bullets drilled the petrol tank and radiator, cut the wings, and eventually killed both pilot and observer, just after the machine had dropped very low and was trying to rise again.

"I saw the captured Albatros yesterday in a shed alongside one of the latest British machines. It affords an interesting illustration of the progress made in German aviation. To laymen, the body looks very much like that of a German aeroplane. There are large iron crosses painted on the wings and tail, and the sides and bottom of the three-ply wooden hull are painted a dull grey.

"German Improvements."

"The 160 h.p. Mercedes engine had been taken from its bed, and lay beside the holed petrol tank and radiator. It is particularly admired for its workmanship. The tank can carry three hours' supply of petrol, and the aeroplane and all its accessories show that it is intended for long voyages. It is built with unusual strength and solidity, with an unusually heavy gun mounting.

"The most interesting improvement in the Albatros is a new cockpit for the gunner-observer behind the pilot's seat, which revolves like the gun turret on a battleship. The Maxim gun is mounted on the rim of the cockpit, and when the observer is



An Aeroplane from China.

A MESSAGE from Hankow on October 2nd announced that the residents of the Yang-tse Valley had on the previous day transmitted to the Overseas Club the sum of £1,500 for the purchase of an aeroplane for presentation to the British Government.

Brave Firemen and the Air Raids.

THE following statement was published yesterday in the London Fire Brigade orders:—

"The undermentioned men have to-day been commended for saving lives on the occasion of the aid raids on September 7th and 8th:—H. E. Stone, H. Dulieu, C. E. Wheatley, H. H. Galloway, E. L. Moyn, J. T. Venes, J. W. Ridden, R. J. Hadgraft, R. B. Bullen, J. O. Small, T. Withall, and C. A. Henley.

"Turncock H. Garner, of the Metropolitan Water Board, has also been commended for rendering valuable assistance on the same occasion."

Another Zeppelin Raid Victim.

IT was announced on the 2nd inst. that a constable of the City Police had died on the previous day as the result of injuries received in the recent air raid over the London District.

The Royal Flying Corps Aid Committee.

Now that the cold weather is again making itself felt we would remind our readers of the excellent work which has been done by the Royal Flying Corps Aid Committee in supplying men and mechanics of the R.F.C. with warm garments, socks and helmets as well as "comforts" of different kinds. Any contributions of such things or the means to purchase them will be welcomed by Lady Henderson, Royal Flying Corps Aid Committee, Surrey House, Marble Arch, W.

In response to a request from the Front it has been possible to send out a few gramophones, and if any of our readers can help, with a few records they will be especially welcome.

The following letter has been received from the South African Aviation Corps:—

"I have pleasure in informing you that the three packages of gifts arrived in splendid condition, during active operations in South-West Africa, at.d, in consequence, owing to such articles being practically unobtainable there, were doubly appreciated by all members of the Corps.

crouched inside behind the gun, he can work it with one hand, and with the other swing both cockpit and gun around in any direction with great ease.

"One of the five fights on September 12th was with a large enemy aeroplane, which is described as looking like a Wright twin-engined biplane. It opened fire on one of our machines at 2,000 yards from a forward gun, and when the fire was returned it retreated towards the German lines with its adversary in pursuit.

"The British airman kept it in sight until it was within 2,000 feet of the ground behind the German lines. It had twin fuselage, a monoplane tail, and no elevator.

"Most of the encounters between opposing aeroplanes take place early in the morning or at about sunset.

"Deadly Humming Birds."

"You can hear these early birds humming overhead at dawn before the army is awake. You can see them hovering above the roofless farmhouses and naked woods that mark the enemy trenches at almost any hour of the day, heedless of the clouds of shrapnel that mark their wake. You can hear them again at nightfall as they wing their way homeward over the yellow fields, flying steadily and serenely across the evening sky.

"Frequently they come home with pierced wings and metal work scarred by bullets, sometimes with a wounded pilot sticking grimly at his steering-wheel, his ebbing strength just sufficient to bring him to earth.

"They sail into the jaws of death and out again as coolly and lightheartedly as they test their new machines. They know that each desperate adventure may be their last, yet they set forth with an air of utter unconcern. They have had experiences more thrilling than those of any trench-bound warrior below, yet you cannot get them to talk about these wild battles in the sky. I have questioned them. 'Oh,' they say vaguely, 'it's all in the day's work.'

"I have seen the report of the airman who fought a German aeroplane on September 7th and sent it to earth—a mile and a half below—like a thunderbolt, blazing and in ruins. It is a bald statement of altitudes, times, and evolutions, written in indelible pencil on a sheet of notepaper.

"I hope the day will come when the full story of these splendid exploits of British flying men can be written—when they will no longer be the anonymous heroes of the air."



"I regret that owing to active service conditions our acknowledgment was not forwarded you earlier.

"Kindly convey to members of your Committee the sincere thanks and gratitude of each member of the South African Aviation Corps for their kind thoughtfulness in including the name of this Corps on your Committee's distribution lists.

"Yours faithfully

"H. F. BATTEN,

"Capt.-Adjutant, for O.C.

"S. African Aviation Corps."

An Insane Act.

AT Rochester on Tuesday, a mechanic named Alfred Henry Beadle, was fined £5 and ordered to pay £4 10s. damages for wilfully cutting an aeroplane propeller $\frac{1}{8}$ th in. shorter than the standard length, thus rendering its use highly dangerous. It was suggested that it was an act of spite because permission had been refused for the man to transfer his services to another firm. We should rather have thought such an act would have been more within the scope of an enquiry by an expert dealing with lunatics.

Airplane or Aeroplane.

"F.R.S.," writing to the *Times* on September 30th, suggests that the word "airplane" should be used instead of "aeroplane," which, so far, holds the field—"although generally pronounced 'aeroplane' by the great uneducated."

German Naval Flyers Drowned.

THE *Daily Mail* correspondent at Copenhagen reported on the 1st inst. that a new German waterplane had capsized the previous evening outside Trelleborg, Sweden, the occupants being drowned.

To Assist German Aeronautic Fund.

IN the wireless news sent out from Berlin on the 3rd inst. there was a message to the German Embassy in New York stating that an exhibition of all English recruiting posters at present issued had been inaugurated for the benefit of the German Aeronautic Fund, and had proved a great material success.

German Aviators for Bulgaria.

ACCORDING to a Reuter message from Athens on Monday, six German aviators had arrived at Sofia.

AIRCRAFT AND THE WAR.

A CENTRAL NEWS message from Paris on the 23rd ult. stated:—

"A Taube flying at a great height passed over Amiens yesterday morning. It dropped several bombs, which fell in the fields, causing no damage to life or property."

A message received from the Dutch frontier by the *Telegraaf* stated that on the 21st ult.:—

"... guns thundered almost uninterruptedly. Aeroplanes, apparently for reconnoitring purposes, followed each other, heavily bombarded by the Germans. The coast was again bombarded."

The following information was received from Bruges by the *Telegraaf* on the 23rd ult.:—

"On Sunday evening and Monday evening, about 9.30, an Allied aviator appeared above the town, dropping bombs. The objective was always the harbour, where some submarines lie, ammunition is manufactured, and other military works are carried on. One brush factory was completely destroyed. Owing to the complete darkness of the town after sunset, the aviators must find great difficulty in finding their way."

M. Naudau, special correspondent of the *Journal*, telegraphing from the Russian Headquarters under date September 22nd, said:—

"The enemy are bombarding the Russian lines (round Dvinsk) simultaneously with their heavy artillery and with incessant bombs from aeroplanes. They are also using asphyxiating gases."

The *Daily Telegraph* correspondent at Rotterdam, writing on the 24th ult., said:—

"The Allies' aircraft now make daily trips, dropping bombs on the German defences. To-day they were over Bruges, where it is believed the enemy has been concentrating troops, and dropped bombs."

Writing from the Isonzo front on September 19th, the *Times* special correspondent said:—

"Suddenly there is an outburst of artillery near by. An Austrian monoplane is flying very high towards the west, but as the puffs of shrapnel-smoke gather quickly round, it turns and makes off homeward. Nearly every day the Austrian aeroplanes set out, but though the Austrian airmen show great pluck and skill, they seem to be outnumbered and outpaced."

According to a message to the *Lokalanzeiger* from Stuttgart on the 25th ult., neither the Royal Palace nor the railway station was hit or damaged during the recent attack by enemy airmen.

From Malines the *Telegraaf*, on the 25th ult., learnt that on the previous Monday a French aeroplane, flying over Mons south-eastwards, was heavily but unsuccessfully bombarded by German infantry.

A Central News message from Amsterdam, on the 25th ult., said:—

"It is learned that the Allies' airmen on Wednesday last bombarded the German positions between Bruges, Middelkerke, and Westend. Several loud explosions were heard, but details of damage caused are lacking."

The *Daily Telegraph* correspondent at Rotterdam, writing on the 26th ult., said:—

"Yesterday there was a phase of the battle raging over a wide area, when all arms were engaged, when there was fighting simultaneously on land, on sea, and in the air."

"In the meantime there was much aerial activity. Three Allies' airmen flew along the coast. The mist still hanging about helped to hide them from the German anti-aircraft gunners, and they were able to drop bombs successfully. During one interval when the fog lifted a German aeroplane tried to seize the opportunity to reach the squadron, but was quickly spotted and driven back to its own lines."

A Central News message from Amsterdam, on the 27th ult., stated:—

"Advices received from the Belgo-Dutch frontier state that Allied aircraft dropped numerous bombs yesterday afternoon on Bruges and Ostend."

"The Dutch frontier town of Sluis, which obtains its gas supply from Bruges, was suddenly cut off, and this fact and the personal

observation of travellers shows that considerable damage must have been done."

An Exchange telegram from Athens, on the 26th ult., said:—

"It is reported from Mitylene that a German aeroplane flew over Vera Gulf at mid-day, and threw two bombs on a French cruiser, afterwards disappearing. The attack was unsuccessful."

Writing to the *Daily Chronicle* from the Isonzo Valley, Mr. M. H. Donohoe said:—

"A captive balloon of the German Army type reared its misshapen form above the Austrian main position far to our front. A daring aircraft of the enemy's fleet hummed its way over the Isonzo a good 5,000 ft. above the river, on a reconnoitring tour. Hawk-like, three Italian aeroplanes, from far away to the west, shot skywards in pursuit. The anti-aircraft guns opened fire on the enemy's airmen, and the latter, while he was yet untouched, and his line of retreat still open, veered to the west and went back home refusing battle to the pursuing aeroplanes."

On September 27th the *Telegraaf* reported:—

"Zeebrugge was again bombarded on Sunday by aircraft."

"In the village of Sluis, which obtains its gas supply from Zeebrugge, the gasometer was suddenly emptied and the gas supply cut off. Last night Sluis was in darkness, and to-day the gas supply is still cut off. It is believed that the gasworks at Zeebrugge have been severely damaged."

The following story was telegraphed from Petrograd by Reuter's correspondent on the 27th ult.:—

"A Zeppelin and four Taubes recently appeared in the Vileika district (east of Vilna) and two of the Taubes landed, one with a damaged motor. The peasants informed the nearest Russian troops, and a sotnia of Cossacks and a detachment of motor-cyclists hastened to the spot."

"The airmen perceived them when at a distance of 300 yards. One immediately ascended. The Russians fired at him and surrounded the second Taube on the ground. The latter's pilot-officer drew his revolver, but before he could fire he was shot dead."

"The other Taube, which was high in the air, was seen to oscillate and suddenly dropped in a field, where it was completely smashed, the airman being killed. Meanwhile the Zeppelin and the other Taubes had come to the rescue, and circled round the spot and dropped bombs, but caused no casualties."

"The Cossacks and cyclists took cover in a neighbouring wood, whence they fired on their aerial assailants, finally driving them off in a westerly direction."

The *Figaro*, on September 27th, published from a correspondent in Switzerland details of the French air raid on Treves and Saarbruck communicated by a manufacturer residing in the latter town. It appears that, though the German *communiqués* try to minimise the importance of the raids, they did excellent work:—

"At Saarbruck the aeroplanes destroyed a great part of the strategic railways."

"At Treves, contrary to the statement of the German Press, which asserts that the aviators took the tramlines for railway lines, the station at Treves Junction, as important as those of Saarbruck and Karthaus, through which the Germans have sent hundreds of thousands of men into Luxembourg and thence into France, was very seriously damaged. The people of Treves were seized with a mad panic. At the time of the raid the ceremony of consecrating the new bishop was taking place in the cathedral. Both clergy and congregation took refuge in the crypt, where they awaited the end of the hurricane of fire."

"One important circumstance is that the aeroplanes operated with such security that an hour after the bombardment several of them came back at about mid-day and hovered over Treves in order to ascertain the damage done."

The *Daily Telegraph* correspondent at Rome, writing on the 27th ult., said:—

"Ten Serbian aeroplanes have flown along the whole of the Austrian frontier, and penetrated sixty miles into Hungary. They confirmed the presence of a few Austrian troops, but no Germans. They perceived some military trains proceeding towards Galicia."

The *Daily Mail* correspondent at Territet (Switzerland), writing on the 23rd ult., said:—

"A Romanshorn (Lake Constance) despatch says that during yesterday's air raid on Stuttgart bombs struck two barracks and

caused considerable damage. Many people were killed and wounded."

An Exchange message from Amsterdam on the 28th ult. said:—

"An aviator of the Allied squadrons flew over Liège yesterday, coming from the south, probably from Rheims, and threw French papers, flags, and proclamations, telling the Liège populace to keep courage, and announcing the last Allies' advance. There was a heavy fire on the aviator, who escaped.

"This air visit is the first since the war over Liège, and caused deep emotion."

The *Daily Telegraph* correspondent at Rome, writing on the 28th ult., said:—

"Russian, French and British aviators are setting themselves to enlighten public opinion in Constantinople and Smyrna, by dropping accurate bulletins dealing with the true German situation. The news with regard to the German defeats in Russia and France was known at Constantinople on Sunday and Monday, despite the severity of the censorship and the watchfulness of the police."

The Maestricht correspondent of the *Maesbode* wired on the 29th ult.:—

"Yesterday twenty-one of the Allies' aeroplanes flew over Aix-la-Chapelle and dropped bombs.

"It is reported that Roterde (an important railway junction on the line to Cologne) is on fire. Only one bomb fell on the station."

The *Daily Telegraph* correspondent at Havre, writing on the 29th ult., said:—

"The Belgian aviators, Lieutenants Castillon and Rubin, who, on September 19th, carried to Brussels a message from the Allies on the eve of the great offensive, in addition to dropping the proclamation containing words of encouragement, also let fall a large Belgian flag, on which was printed in big letters 'Courage' and 'A bientôt.' They were able to see a crowd of people seize the flag before the Germans could get possession of it and carry pieces of it as treasured relics."

A message received in Paris from Bucharest on the 1st inst. stated:—

"A German aeroplane flew over the town of Calafat yesterday at a height of 2,200 to 2,500 feet. When it was passing over the 31st Infantry Regiment it was shot at by a Roumanian warplane, which was travelling towards Serbia, whereupon it changed its direction, and landed at Palanka, in Bulgarian territory."

In a message from Paris on October 3rd the *Daily Mail* correspondent in Paris stated:—

"The attack by air on the railway station at Vouziers (the German Crown Prince's base in the Argonne) by sixty-five French aeroplanes—the greatest number that ever operated together in war—was carried out, I learn to-day, on similar lines to those successfully employed before.

"The French are delighted with this success, and demand is growing for still more reprisal raids into Germany until the enemy shall definitely renounce the bombardment of unfortified towns."

A Reuter message from Paris on October 2nd stated:—

"The 'avion-canon,' or gunplane, referred to in the afternoon communiqué, is a biplane armed with a small Hotchkiss gun on the upper plane in addition to the ordinary machine-gun. Captains Remy and Faure were killed last January while experimenting with this type of machine at Issy-les-Moulineaux.



LIGHTER THAN AIR.

Seeing Double.

ON the night of the last Zeppelin raid, a wealthy bachelor returned to his flat in a condition necessitating the help of the porter in getting upstairs. Half way up, the porter realised that if he got on the opposite side of his charge, he could help himself by a pull on the balusters; so changed over. Arrived at the top, he was handed half-a-crown, with the remark: "Here y'are, my good fellowsh; share that between you."



If Humans were Barn-door Monoplanes.

A LITTLE chap of four was watching his father feed the chickens, and, after thinking deeply for a while, asked:

"Father, I suppose if we were all chook-chooks, mother and baby would have to lay the eggs, and you and me would just strut about, wouldn't we?"

"Since then improvements have been introduced, and the gun-plane has taken its place as a practical weapon in offensive aerial warfare."

The *Daily Telegraph* correspondent at Rome in a message on October 3rd said:—

"While the Serbian newspapers affirm that large enemy forces are concentrated at Orsova, the Government is unable to confirm these reports, because aerial reconnaissances have not revealed the presence of these forces within a radius of forty or fifty miles. The Government, however, does not exclude the possibility that enemy forces may be concentrated further back."

In the *Matin* of October 1st, the following details were given of some of the air work of the French flying officers in the Great Battle:—

"During the operations in Champagne French airmen flew at a height of only 400 to 500 yards behind the German lines, effecting reconnaissances and regulating the French fire. They were subjected to an intense bombardment, and many of them returned with their machines riddled with bullets, their petrol tanks smashed up, and their engines damaged. One of them, the *Matin* says, had a most dramatic experience. At a height of 400 metres his observer was hit by a bursting shell, which grazed his skull. At the same moment the pilot was hit in the stomach by a bullet.

"The aviators were carrying five bombs, to be dropped on certain strategic points. The machine, left to itself, began to drop. Seeing the pilot's condition, the observer hastily removed the detonators from two of the bombs, but had no time to do this with the three others, for the machine made a sudden dive forward and came down at a distance of only fifty yards from the German trenches. Fortune, however, now smiled at him. The bombs did not explode, the shot and shell whistling round him left him untouched, and he finally escaped from this fearful adventure practically unhurt."

A telegram to the *Telegraaf* says that some of the bombs dropped weighed 75 lb.

Writing from Boulogne on the 4th, the *Daily Telegraph* correspondent said:—

"The following description of an exciting fight that took place recently between British and German aeroplanes has just been recounted to me by an eye-witness:

"The incident," he said, "took place over a little station on the British front, nicknamed 'Flighty Corner,' owing to the large number of aerial combats that have taken place there.

"Some fifteen British aeroplanes were stationed near by. Suddenly the sound of heavy firing was heard. The Germans had sent out four airmen.

"Like a flock of birds every machine round the station left the ground to meet the enemy.

"In a few minutes the four German aviatiks were flying above the British machines. As the fifteen aeroplanes made towards the four German aircraft the machine-guns aboard the latter opened fire, but by skilful movements the whole of the fleet of Allied aeroplanes managed to surround the four German machines. One of the British machines had to come to ground, and, taking advantage of the opening in the surrounding circle of aeroplanes, the four Germans made off at top speed towards their lines, pursued by the fourteen British machines.

"The four German machines got away, but three of them were badly hit, and had great difficulty in escaping. The fourth was seen to burst into flames when over its own lines. The British pilot, who was forced to come down, was not badly hurt."

If you find your 'bus too heavy, why not paint all the metal parts aluminium and make 'em lighter?



"LIEUT. VIDARD, the French pilot, photographed by his wrecked aeroplane."—*Daily Mirror*.

What next will our aeroplanes do?—*London Opinion*.



"By ordering the *Star*, and signing a similar receipt form inserted in it, your life will be insured against Zeppelins. Therefore, you are safe if you sign the free insurance forms in the *Daily News* and the *Star*."

It is rumoured that Count Zeppelin, on reading the above notice, realised the futility of his efforts and sent in his resignation.—*Punch*.

After the Raid.

"ESSEX.—Bungalow, furnished; near sea; shell beach."—*Morning paper advertisement.*

Tales the Barber Tells.

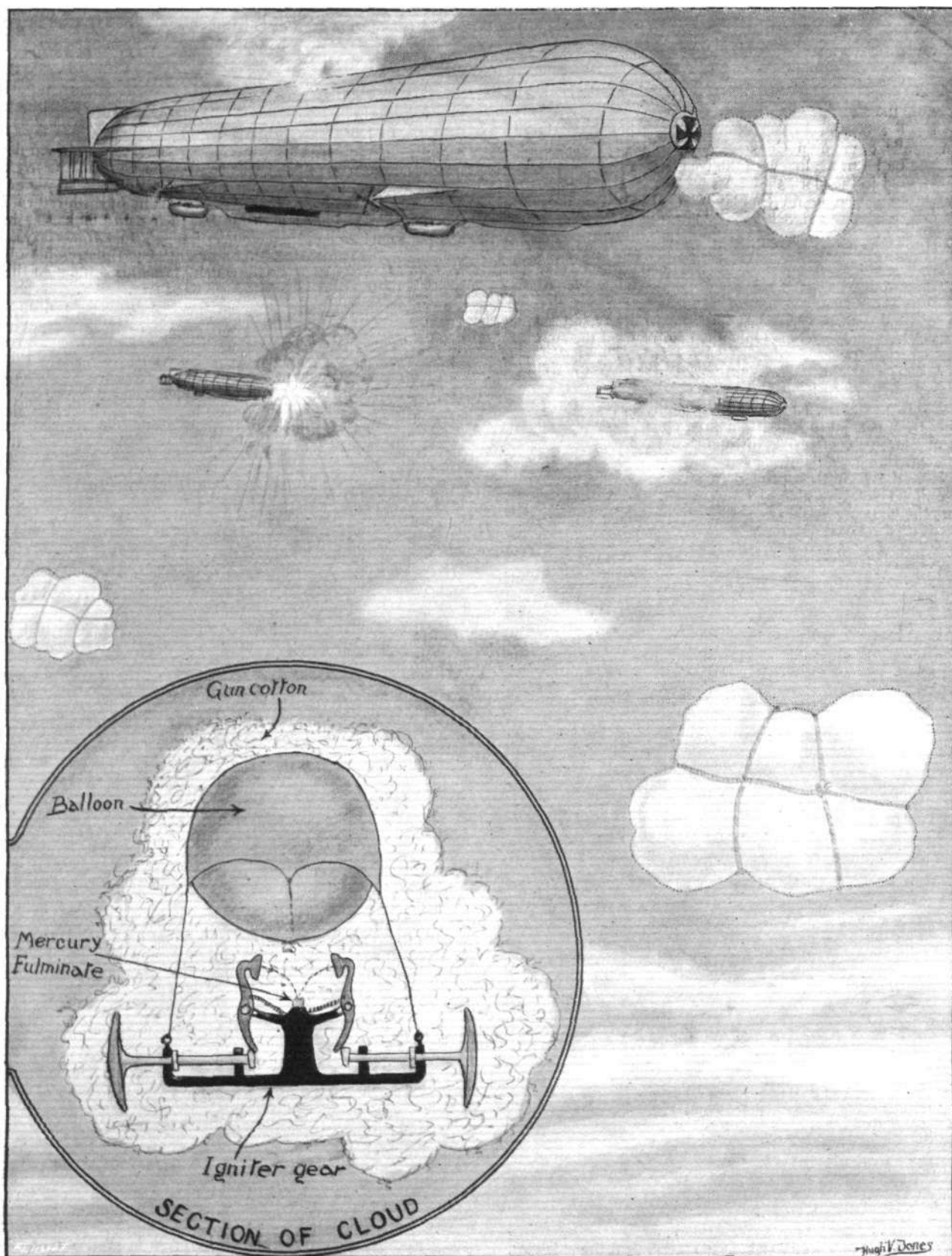
"I HEAR they've brought out a new anti-aircraft gun," said the in-the-know barber. "It makes no noise when it's fired, and when

the shell bursts there is nothing left to fall on the people below."—*The Star.*

! ! !

The Cautious Touch.

"FROM Bruges the *Telegraaf* learns that on Sunday evening and Monday evening, about 9.30, an alleged airman appeared above the town, dropping bombs."—*Exeter Express.*



ZEP.-STRAFING" DEVICES. By "FLIGHT'S" Tame Inventor.

No. 4.—The "Mist"orious Clouds.



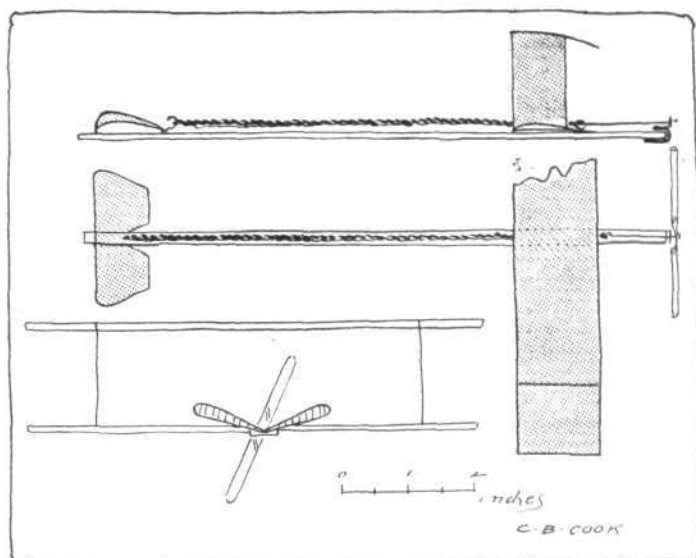
ALL communications in connection with this section should be addressed to the Model Editor, "FLIGHT," 44, St. Martin's Lane, London, W.C. Correspondents are requested to write on one side of the paper only.

A Paper Model.

THAT paper gliders can be made into good self-propelled models is shown by the following notes by Mr. Cecil B. Cook:—

"I enclose some drawings of a little model, which was intended to be a glider.

"It glided very very well indeed in its original form, so I thought I would fix a rubber-driven propeller. I did, although I did not think it would be much of a success. To my astonishment, however,



it flew, first round in circles, and then, with a little adjustment of the elevator, a maximum flight of no less than 30 yards was obtained.

"While flying it was pretty stable, and it finished up with a short glide to the right.

"The lower plane is double-surfaced paper, partly for the sake of appearance, but chiefly to obtain stiffness. The top plane is only single-surfaced. The main motor rod is of satin walnut, $\frac{1}{16}$ in. by $\frac{1}{8}$ in. by 9 ins.; the planes are 7 ins. by $1\frac{3}{4}$ in., and the struts (if they may be called so) are double paper, $1\frac{1}{2}$ in. by $\frac{3}{4}$ in., therefore the gap is $1\frac{1}{2}$ in. The elevator is 2 ins. by $\frac{3}{4}$ in.; the propeller is $2\frac{3}{4}$ ins. diameter carved, about 7 ins. pitch, and is driven by one strand of $\frac{1}{16}$ in. strip elastic."

Model Work in Australia.

Some interesting notes on model work "down under" are contained in the following letter from Mr. M. A. Braithwaite, of Melbourne, Victoria:—

"Having noticed very few reports of colonial models or doings during my three years as a reader of 'FLIGHT' I have taken the liberty of sending particulars of one of my machines, together with a short account of model aviation in Victoria.

"The following are the leading particulars of the machine:—

"The fuselage is 28 ins. in length, and is constructed of three $\frac{1}{2}$ -inch square spruce longitudinals with steel wire distance pieces. The main plane, of Blériot pattern, is made of 18-gauge piano wire, with a spruce spar as a stiffener, and is 33 ins. span. The chord is 6 ins., and the camber $\frac{1}{2}$ in. It is double surfaced. The tail plane, also of piano wire, is of triangular form, 8 ins. by 10 ins. at base. The elevator is 10 ins. by 2 ins., divided. These planes are covered with silk, varnished.

"The propeller is 9 ins. diameter, with 11 ins. pitch, and is driven by two skeins of six strands, each of $\frac{1}{4}$ -inch strip rubber through a $\frac{1}{2}$ -inch twin gear.

"The chassis, on Nieuport lines, is constructed of steel wire—the skid being wood reinforced with steel wire, then bound with glued silk. It is not connected to the fuselage in the usual manner, but as shown in sketch. The wheels are 2 ins.

"The total weight is 8 ozs.—loading about 5 ozs. per square foot.

"It will rise, with a slight push, and fly about 90 yards at about

15 feet high. The results are not very startling, but I think the propeller is undersized, and I am arranging to fit a larger one.

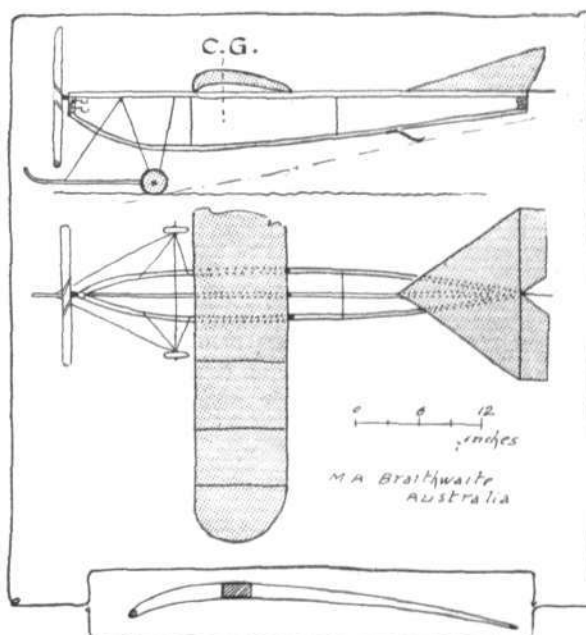
"Starting in 1909, when I was 13 years of age, I experienced failure after failure, until early in 1914, when my first model, a hand-launched A frame, flew and caused a large amount of excitement among the locals; since then I have had scarcely a failure.

"I have built in all eight models, consisting of six A frames, including one hydroplane and two tractors. The hydro. was not a great success, although it has flown, merely a hop, however, of about 30 yards. Owing to lack of spare time I have been unable to devote time upon improvements.

"One of my A frames developed into a first-class looper. The manner in which I first discovered it could loop is rather amusing. I was flying before a large audience one afternoon at the time M. Guillaux was in Melbourne, when the inevitable 'small boy' asked if I could make my model loop. I replied 'Yes,' as I had just before read in 'FLIGHT' that an 'over-powered and over-elevated model will invariably loop the loop.' Knowing that my model was considerably over-powered, it was only the work of a second to over-elevate, and to my (and the spectators') surprise it completed three well-formed loops. The cheer that went up was worthy of the effort.

"I read with much interest the article on double-surface planes, as I had just finished mine and was anxious to know how it would behave. My method is to construct a piano-wire frame in the ordinary manner, then fix a spruce spar along the top, finally putting extra ribs over spar and soldering to leading and trailing edges, giving a section as below:—

"This method is very simple, though inclined to come out heavy if the soldering is not carefully carried out. In any case the actual results obtained are far above the single surface, as well as the appearance being more like the real thing, and, in my opinion, it is well worth the extra labour.



"The one great trouble was rubber and accessories in my 'pioneering' days; in fact, I have often been compelled to use the elastic from golf balls. Early in 1914 we were asked ninepence per yard for rubber, and inferior quality at that, and when I priced a pair of propellers for the first A frame I was asked 12s. 6d. I made my own (steamed). The purchase of accessories has been the drawback right through, but after the exhibitions by Hawker and Guillaux everybody talked aeroplanes, and English supplies began to trickle through, and we can buy English rubber at fourpence per yard.

"Other details are all, more or less, anything above 100 per cent. on English prices; in a few cases, fortunately not many, it

goes as high as 300 per cent. So you can see that taking it all ways we do not have a rosy time.

"I have made a number of experiments with paper gliders, and the most successful was the small biplane described by Mr. Pinney; after some good glides at a flat angle I fitted a small cardboard propeller, which greatly enhanced its appearance in flight, and, to my mind, is also a means of keeping it straight.

"Great public interest was aroused by Hawker's and Guillaux' exhibitions here, and a model aero. club was formed. We have held two competitions which evoked a great amount of interest. In the first one a lot of mistakes were naturally made, as it was our first attempt at organising such an event, but it was a case of learn by your faults, and we took good care to profit by our experience in our second, which passed off with scarcely a hitch. The rather novel sight of seeing aeroplanes in the air attracted a large audience, who came along in all manner of vehicles to witness the contest. A common remark overheard was that the models all flew backwards. The winner gave a splendid flight of 40 seconds out of sight.

"Unfortunately, owing to a number of members enlisting and the bad weather we have been experiencing lately, some of the remaining members are losing interest and our membership is rather low. However, we hope for better times."

The Wings of an Albatross.

Mr. E. Alleyne Freeman writes to correct two mistakes in his letter which appeared in our issue of August 27th:—"From the first joint to second joint, and from second joint to body, should both be 1 ft. 6 ins. and not 2 ft. 6 ins."

UNAFFILIATED MODEL CLUBS DIARY AND REPORTS.

Club reports of chief work done are published monthly. Secretaries' reports, to be included, must reach the Editor on the last Monday in each month.

Finsbury Park and District (66, ELFORT ROAD, Highbury, N.).

Monthly Report.—September has proved full of interest, especially as regards assortment of types; performances have generally been above the average, while some waterplanes have made their appearance. Mr. B. H. Barnard (Lincoln-Beechy type), A. Richards (high aspect ratio Morane type), and F. E. Rayner (Morane), have been giving flights of 40-50 secs., while Messrs. S. Hex and W. Hardinge, also flying tractors, have averaged 30-35 secs., showing good stability in flight. Messrs. Barnard, Rayner and Richards have also built tractor waterplanes and the two former made their debut at Highgate on Sept. 18th, acquitting themselves well. Mr. Rayner's machine of Morane form getting off very nicely, and although the resistance of its rather broad floats reduced its duration capacity somewhat, it flew really well. Sept. 25th, all members reverted to landgoing types and some very pretty flying was seen, extremely good flights being put up by Messrs. S. Hex, B. H. Barnard, and F. E. Rayner, as well as by Mr. Coleman, turncrew, of the "Aero Models."

Liverpool Aero Research Club (62, CEDAR GROVE, LIVERPOOL).

Monthly Report.—Sept. 4th opened the month's proceedings and proved a very busy day, the chief work being performed by G. H. Kilshaw, who put up one of the best displays of his for a considerable time, doing some very neat work with two r.o.g. machines—a single screw tractor mono. and a new racing canard tractor biplane, both good stability. In addition there was some very fine arrow-plane flights by T. W. Bennett, who through slight mishap was unable to work biplane. B. Tear also prominent with work on a r.o.g. single tractor mono. and h.l. negative-tip canard. With fine weather on Sept. 11th, some excellent work was accomplished, the chief flying being with tractors, the F. Lowe machine doing splendid arrow-propeller trouble cured. The two r.o.g. G. H. Kilshaw models, tractor mono. and canard biplane, also doing exceedingly well, the latter being best. A new h.l. canard by D. McKnight showed early signs of success. Sept. 18th, little work was done, barring the canard twin flying by F. Lowe and G. H. Kilshaw, owing to important club matters pending settlement. Sept. 25th, T. W. Bennett did some good flying on his r.o.g. canard biplane, B. Tear also doing business with h.l. hollow-spar mono. G. H. Kilshaw, in addition to flying h.l. negative-tip mono., did some stunt and looping tricks on a h.l. flexible wing canard. The wind, however, prevented anything startling.

Scottish Ae.S. Model Ae.C. (5, DOUNE QUADRANT, GLASGOW).

Oct. 2nd, at Paisley Racecourse (weather permitting), all types for records. *Monthly Report.*—On Sept. 2nd the annual general meeting of the club was held in the Y.M.C.A. The secretary's report showed that there were 7 members away on service and that altogether 14 flying meetings had been held throughout the year, being much below the average, owing to the war. The financial statement showed a good balance in hand and was passed and approved. The following office-bearers were duly elected for the ensuing year:—President, J. R. K. Law, Esq.; Secretary, Jas. C. Balden; Treasurer, Wm. Foster; Committee, Messrs. Mills, Donaldson, Maekim, and Ross; Official Observers, Messrs. Foster, Maekim, Mills and Balden. The new session has now commenced and the secretary will be pleased to hear from intending members, and reply to any inquiries regarding the club. Subscriptions: Juniors, under 16 years of age, 3s. 6d. per annum; Seniors, 7s. 6d. per annum.



C.A.V. Specialities.

MESSRS. C. A. VANDERVELL AND CO., the well-known electrical engineers, manufacturers of the C.A.V. specialities, ask us to contradict a rumour to the effect that H.M. Government have taken over the entire output of their works, both at Acton and Birmingham. While Messrs. Vandervell are working under the direct control of the Ministry of Munitions, and in that capacity are executing very large contracts for the Government, we understand they are still in a position to fulfil orders, without undue delay, for their various standard productions, having just completed and equipped still further extensions to their factory at Acton, the total area of the firm's factories now covering over 7 acres.

More G.A.C. Expansion.

WHILE in the Willesden district recently we had an opportunity of seeing something of the way in which the business of the General Aeronautical Company is developing. In order to cope with the continually growing demand for various G.A.C. specialities, extensive works have been taken in Hythe Road, and equipped with a splendid installation of machinery, so that the various manufacturing activities of the firm will now be centralised under the one roof.

Adjoining the works is the factory of the British Emaillite Co., a new building specially designed for the company's requirements, while just across the railway which runs at the back of the premises is the British Anzani Engine Co. works.

An Opening for Metal and Wood Workers.

THE Cooper Laboratory for Economic Research, Rickmansworth Road, Watford, Herts, contemplate taking up the manufacture of aeroplanes, and are anxious to get into touch with a few firms who can undertake certain classes of work such as small metal turning, sheet-metal work, oxy-acetylene welding, and woodwork. Those who can help in this way should write to the above address giving full particulars.

A New Society Proposed.

AT a meeting held at the Royal Society of Arts on September 30th, with Sir Wm. M. Ramsay in the Chair, it was decided to inaugurate the Aeronautical Institute of Great Britain. It was stated that the first work of the Institute would be the establishment of an aeronautical production committee. The committee would aim at increasing the rate of aircraft production by:

1. Organising a central bureau, and so rendering possible the co-operation and co-ordination of the industry;
2. Giving financial institutions technical assistance, so linking up finance with industry; and
3. Making arrangements for the best utilisation of the existing labour, and for the training of men for aeronautical work as the situation demanded.

There are so many difficulties which would appear to be inherent at the present time to the proposed scheme, that we await more detailed particulars, and shall watch the Institute's development with some curiosity.

Mr. Busk's Estate.

It was announced last week that Mr. Edward Teshmaker Busk, aged twenty-eight, of Hermongers, Rudgwick, Sussex, formerly of King's College, Cambridge, the well-known designer attached to the Royal Air Craft Factory, who was burned to death on November 5th while flying above the Long Valley, Aldershot, left real and personal estate of the gross value of £63,304, of which the net personality is sworn at £9,538.

Wireless Operators in the R.F.C.

A LARGE number of members of the Royal Flying Corps are daily receiving training in wireless telegraphy at Marconi House, the Marconi Co. having placed practically its entire resources at the disposal of the Corps. Last week a batch of 150 men presented themselves for instructions, and it is stated that they are taking the keenest interest in their work.



Aeronautical Patents Published.

Applied for in 1915.

Published October 7th, 1915.

6,265. G. ANTONI AND U. ANTONI. Aerial machines.

9,618. FRIED. KRUPP AKT.-GES. Parachutes for illuminating devices.

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